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VOL. XIV. NO. 18.

SEPT. 15, 1886.

PEACE ON EARTH  
GOOD WILL TOWARD MEN



GLEANINGS  
IN

BEE CULTURE

DEVOTED  
TO

HOME INTERESTS.

MEDINA, OHIO.

BY

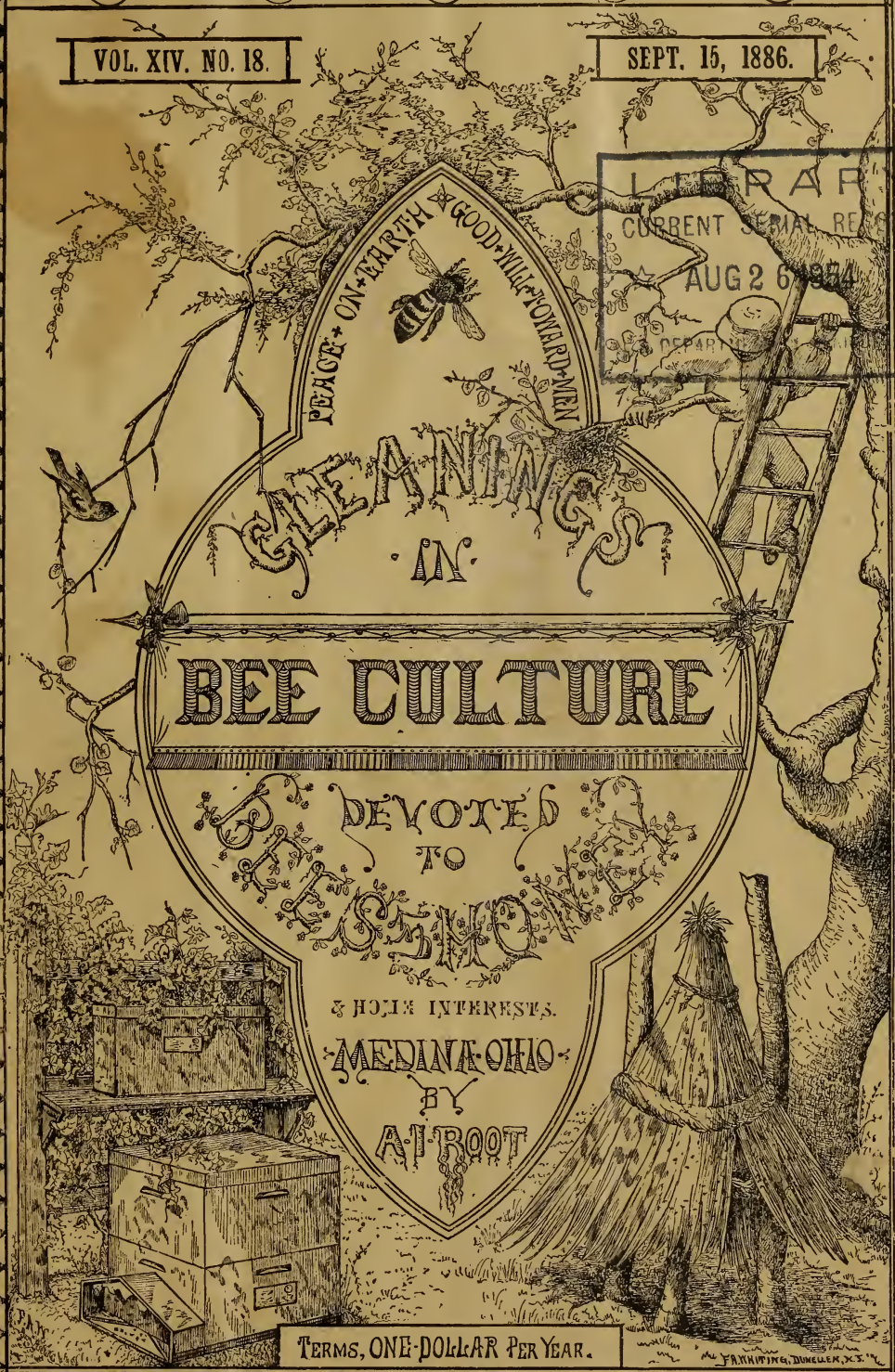
A. ROOT

TERMS, ONE DOLLAR PER YEAR.

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DEPARTMENT OF AGRICULTURE



ENTERED AT THE POSTOFFICE, MEDINA, OHIO, AS SECOND-CLASS MATTER.



## JOB LOT OF WIRE CLOTH

AT GREATLY REDUCED PRICES.

### SECOND QUALITY WIRE CLOTH AT 1½ CTS. PER SQUARE FT.

These prices are good only when you take a full roll. If you order less than a roll we charge 2c. per sq. ft. Sometimes the roll you order is gone before your order reaches us, in which case we send the next largest roll, unless it is a great deal larger.

SOME OF THE USES TO WHICH THIS WIRE CLOTH CAN BE APPLIED

This wire cloth is second quality. It will answer nicely for covering doors and windows, to keep out flies; for covering bee-hives and cages for shipping bees; making sieves for sifting seeds, etc.

Number of Square Feet contained in each Roll Respectively.

26 59 21 rolls of 217, 37 of 216, 2 of 215 s. f.  
28 2 2 rolls of 233 s. f.  
38 27 23 rolls of 316, 2 of 317, 1 each of 632, and 285 s. f.

### FIRST QUALITY WIRE CLOTH AT 1¾ CTS. PER SQUARE FT.

The following is first quality, and is worth 1¾ cts. per square foot. It can be used for any purpose for which wire cloth is ordinarily used; and even at 1¾ cts. per sq. ft. it is far below the prices usually charged at hardware and furnishing stores, as you will ascertain by making inquiry. We were able to secure this very low price by buying a quantity of over one thousand dollars' worth.

24 39 rolls of 200 sq. ft. each.  
26 55 rolls of 216 sq. ft. each; 1 each of 199, 195, 201, 200, 227, 204 sq. ft.  
28 71 rolls of 233, 10 of 224, 6 of 222 sq. ft.; 1 each of 257 sq. ft.  
30 24 rolls of 250 sq. ft.  
32 13 of 266, 4 of 256, 1 of 275 sq. ft.  
34 25 rolls of 283 sq. ft. each, 1 of 198 sq. ft.  
36 15 rolls of 300 sq. ft. each; 1 of 288 square ft.  
38 1 roll each of 300 and 316 sq. ft.  
40 1 roll of 192 square feet.

A. I. ROOT, Medina, Ohio.

## PASTEBOARD BOXES

FOR ONE-POUND SECTIONS OF

## COMB HONEY.



THIS box has a bit of "red tape" attached to it to carry it by. It makes a safe package for a single section of honey for the consumer to carry, or it can be packed in a trunk, if he wants. It can be opened in an instant. The price of the box is 2 cts. each, set up; in the flat, 15 cts. for 10; package of 25, 30 cts.; \$1.00 per 100; or \$9.00 per 1000; 10,000, \$90. If wanted by mail, add \$1.00 per hundred for postage. Colored lithograph labels for putting on the sides, two kinds, one for each side, \$3.00 per 1000. A package of 25, labeled on both sides, as above, 50 cts. By mail, 30 cts. more. They can be sold, labeled on one side or both sides, of course. We have only one size in stock, for Simplicity sections. Sample by mail, with a label on each side, 5 cts. If you want them shipped in the flat, labels already pasted on, the price will be ten cents per hundred for putting them on.

Your name and address, and the kind of honey, may be printed on these labels, the same as other labels. The charge for so doing will be 30 cts. per per 100; 250, 50 cts.; 500, 75 cts.; 1000, \$1.00.

A. I. ROOT, Medina, O.

## THE A B C OF BEE CULTURE.

27TH THOUSAND NOW READY.

AVERAGE SALE, 200 PER MONTH.

In ordering please state distinctly whether you want cloth or paper binding.

Single copies, cloth bound, postpaid by mail, \$1.25; same as above, only paper covers, \$1.00. From the above prices there can be no deviation to any one; but each purchaser, after he has paid full retail price for one book, may order the cloth-bound to any of his friends on payment of \$1.00, or the paper cover at 75 cents each. This discount we give to pay you for showing the book, explaining its worth, etc. If you order them by express or freight, you may take off 15 cts. from each cloth-bound book, or 12 cts. for each one in paper covers. Of course, it will not pay to do this unless you order a number at a time, or order them with other goods. To those who advertise A B C books in their price lists and circulars, a discount of 40 per cent from retail prices will be made, and this discount will be given to all booksellers and newsmen. To any one who purchases 100 at one time, a still further discount will be made, to be given on application, and the 100 may be made up of part cloth and part paper, if desired. Purchasers are requested not to sell single books at less than the regular retail prices, although they may sell two or more at any price they think proper; or the A B C may be clubbed with any other book or periodical, at such prices as the agent thinks proper.

Cook's Manual in cloth at the same price as above.

A. I. ROOT, Medina, O.

## NOW READY.

## TERRY'S NEW BOOK ON

—THE—

## WINTER CARE

—OF—

## HORSES & CATTLE.

THE MOST HUMANE

—AND—

PROFITABLE TREATMENT.

Although the book is mainly in regard to the winter care of horses and cattle, it touches on almost everything connected with successful farming—shelter, comfort, feeding, exercise, kindness, different sorts of feed, with a full treatise on the most economical way of saving manure. A full description of the model barn is given, as shown on p. 396.

PRICE 40 CTS.; BY MAIL, 43 CTS.

A. I. ROOT, Medina, O.

## THE A B C OF

## CARP CULTURE

A COMPLETE TREATISE

Upon the Food Carp and its Culture,

INCLUDING PLANS AND SPECIFICATIONS, AND FULL-EST INSTRUCTIONS FOR THE CONSTRUCTION OF PONDS, AND EVERY THING PERTAINING TO THE BUSINESS OF RAISING CARP FOR FOOD.

By MILTON P. PEIRCE,

Secretary of the American Carp Cultural Association.

Illustrated by Many Fine Engravings,

With a Copious Index.

PRICE 35 CTS.; BY MAIL, 40 CTS.

A. I. ROOT, Medina, O.

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## CONVENTION NOTICES.

### THE NORTH-AMERICAN BEE-KEEPERS' SOCIETY.

The society will hold its 17th annual convention, Oct. 12, 13, and 14, 1886, at Indianapolis, Ind.

The meeting will be held in Pfafflin's Music Hall, 82 and 84 North Pennsylvania St., one of the most pleasantly situated halls in the city. Good ventilation and plenty of light.

The society headquarters will be at the Occidental Hotel, corner of Washington and Illinois sts., in the heart of the city, and but a short distance from the hall. The regular rates at this hotel are \$5.00 per day. Special rates for those in attendance at the convention will be \$1.50 per day.

The North-Western Bee-Keepers' Society, The Indiana State, The Eastern Indiana, with various county and joint societies, will meet in union with the N. A., making it one of the most formidable meetings of bee-keepers ever held in this country.

Every thing possible will be done to make the meeting pleasant and entertaining. A cordial invitation is extended to all.

The following is the programme:

#### FIRST DAY—TUESDAY.

Forenoon session, 10 A. M.—Convention called to order. Address of welcome by Gov. I. P. Gray. Response by the president, R. D. Cutting. Welcome to the city mayor, Caleb S. Denney. Thanks, Dr. C. C. Miller, president of the N. W. Society. Calling the roll of members of last year. Payment of annual dues. Reception of new members and distribution of badges, reports of secretary and treasurer. Announcements.

Afternoon session, 2 P. M., special business.—Annual address of the president; Bee Studies, by Prof. A. J. Cook, Agricultural College, Michigan; Apicultural Journalism, by John Aspinwall, Barrytown, N. Y.; Bee Literature, by Thomas G. Newman, Chicago, Ill.; The coming bee, what encouragement have we to work for her advent? by R. L. Taylor, Lapeer, Mich. Subject for discussion, Has Apis Americana been reached? Evening session, 7:30 P. M.—Announcements. Miscellaneous business. Discussion of questions that may have accumulated during the day.

#### SECOND DAY—WEDNESDAY.

Morning session, 9 A. M.—Announcements. Communication. Call of N. W. Society to elect officers. Election of officers of Indiana State Society. Call to order, Rendering Comb into Beeswax, by C. P. Dadian, Hamilton, Ill.; Foul Brood, by A. J. King, New York. Selection of place for holding meeting in 1887. Election of officers.

Afternoon Session, 2 P. M.—Announcements. Miscellaneous business; Bee-keeping and Apiculture, by Prof. N. W. McLinn, U. S. Apicultural Station, Aurora; Feeding Bees for Winter, by Jas. McNeill, Hudson, N. Y.; Wintering, by Dr. A. B. Mason, Wagon Works, Ohio; Subjects for discussion, Is the use of foundation necessary in modern bee culture? Are perforated honey-boards a success? Unassigned papers.

Evening session, 7:30 P. M.—Announcements. Miscellaneous business. Discussion of questions in question-box. Social communications.

#### THIRD DAY—THURSDAY.

Morning session, 9 A. M.—Announcements. Miscellaneous business. Communications. A Talk on Hives, by James Heddon, Dowagiac, Mich.; Reversible Hives and Frames, by J. E. Pond, Jr., North Attleboro, Mass.; Drone and Drone Comb, by W. Z. Hutchinson, Rogersville, Mich.; Reports of vice-presidents; Progress of Bee-keeping in Indiana, by Jonas Scholl, Lyons Station, Ind.

Afternoon session, 2 P. M.—Announcements. Miscellaneous business. Explanation of various articles on exhibition.

Many good things are yet to be added to the programme not sufficiently developed to give. FRANK L. DOUGHERTY.

The 4th annual meeting of the Progressive Bee-Keepers' Association will be held in the Town Hall at Bainbridge Center, O., on Thursday, Oct. 7, 1886. Parties wishing conveyance from Geauga-Lake Station, 3 miles distant, on the N. Y. P. & O. R. R., will please notify me so that arrangements can be made for the same. All interested are invited to come and bring their lunch-basket. MISS DEMA BENNETT, Sec.

Bedford, Cuyahoga Co., O.

The Sheboygan Co. Bee-Keepers' Association will hold its next meeting at Chandler's Hall, at the village of Sheboygan Falls, on Saturday, Oct. 16, at 10 A. M. Mrs. H. HILLS, Sheboygan Falls, Wis.

The Southern Ill. Bee-Keepers' Association will hold its next meeting at Benton, Franklin Co., Ill., Thursday, Oct. 21, 1886, at 10 A. M. F. H. KENNEDY, Sec.

The annual meeting of the Western Bee-keepers' Association will be held in Pythian Hall, corner of Main and 11th Streets, Kansas City, Mo., Oct. 27, 28, 29, 1886. P. BALDWIN, Sec.

The Illinois Central Bee-keepers' Association will hold its next meeting at Mt. Sterling, Ill., on Tuesday and Wednesday, Oct. 19 and 20. J. M. HAMBAUGH, Sec.

## KIND WORDS FROM OUR CUSTOMERS.

I am glad to inform you that the tested Italian queens bought of you in July last have proved to be all that I could have expected. I have produced very fine three-banded workers.

Emmettsville, Ind.

JACOB CAYLOR.

The untested queen received from you some time since proves to be a fine one, and very fertile. She produces fine 3-banded workers. The season is very poor in this section. Basswood has failed entirely. Clover yield was not large. Buckwheat promises well, but is not fully out yet.

R. G. KLING.

Charleston Four Corners, N. Y.

### HOW TO PUT ON THE ROUND LABELS.

The goods came to hand. Those round labels No. 17 are beauties, and the place to stick them is on the inside of the glass (I use them for comb honey), just so they will be in the center of the section. They make very nice combinations and they will never get soiled, and the commission men can't get them off nor scratch off the address. H. W. FUNK, Bloomington, Ill., Sept. 4, 1886.

The imported queen you sent to replace the missing one arrived safely, and is now laying in a new colony. We are well pleased with her appearance, and she seems to be especially prolific. And we are also much pleased with the way you settled the matter in regard to the loss of the first queen. We can not say that we expected you to replace her at your own entire expense, but felt willing to leave the matter entirely in your hands, feeling satisfied that you would do the fair thing in the matter.

Pomeroy, O.

S. A. DYKE & CO.

I can not send off my order without expressing briefly my gratitude for such a blessing as GLEANINGS is to us. Each year I have taken it contains at least 24 happy days—the days on which GLEANINGS comes; and whenever I write to distant friends I tell them of its merits. I have kept bees now just nine years, and I am quite sure that no one ever cared more for their bees than I do. I am ever so sorry to know that you have foul brood in your apiary; but I like the method you have taken for a cure—the furnace idea.

W. S. POWDER.

Groesbeck, Ham. Co., O., Sept. 2, 1886.

ITALIAN QUEENS, tested, \$1.00; hybrid, 3 for \$1.00. N. ADAMS, 18-19-20d Sorrento, Orange Co., Florida.

## FOR SALE CHEAP.

For \$4.50 each I will sell 60 colonies of bees in splendid hives and in fine condition. I am compelled to move soon, and must sell a part of my fine apiary. For particulars, address

18d M. J. HARRIS, Clay City, Clay Co., Ill.

ADAMT'S FOUNDATION FACTORY, WHOLESALE and RETAIL. See advertisement in another column. 311d

## Foundation - Mill For Sale.

One ten-inch Root comb-mill, second hand. The mill has, however, been completely fitted up, painted, and varnished, and is, to all appearances, both in looks and quality of work, equal to a new one. Price \$15.00. The list price of a new mill of this kind is \$30.00. A. I. ROOT, Medina, O.



## DADANT'S FOUNDATION

is asserted by hundreds of practical and disinterested bee-keepers to be the cleanest, brightest, quickest accepted by bees, least apt to sag, most regular in color, evenest, and neatest, of any that is made.

It is kept for sale by Messrs. A. H. Newman, Chicago, Ill.; C. F. Muth, Cincinnati, O.; Jas. Heddon, Dowagiac, Mich.; F. L. Dougherty, Indianapolis, Ind.; Chas. H. Green, Berlin, Wis.; Chas. Hertel, Jr., Freeburg, Ill.; Ezra Baer, Dixon, Lee Co., Ill.; E. S. Armstrong, Jerseyville, Illinois; Arthur Todd, 1910 Germantown Ave., Phil'a, Pa.; E. Kretzhmer, Coburg, Iowa; Elbert F. Smith, Smyrna, N. Y.; D. A. Fuller, Cherry Valley, Ill.; Clark Johnson & Son, Covington, Kentucky; J. B. Mason & Sons, Mechanic Falls, Maine; C. A. Graves, Birmingham, O.; M. J. Dickason, Hiawatha, Kan.; J. W. Porter, Charlottesville, Albemarle Co., Va.; E. R. Newcomb, Pleasant Valley, Dutchess Co., N. Y.; J. A. Humason, Vienna, O.; G. L. Tinker, New Philadelphia, O.; J. M. Shuck, Des Moines, Ia.; Aspinwall & Trendwell, Barrytown, N. Y.; Barton, Forsgard & Barnes, Waco, McLennan Co., Texas, W. E. Clark, Oriskany, N. Y., and numerous other dealers.

Write for samples free, and price list of supplies, accompanied with 150 Complimentary and unsolicited testimonials, from as many bee-keepers, in 1883. We guarantee every inch of our foundation equal to sample in every respect.

CHAS. DADANT & SON,  
3btfd Hamilton, Hancock Co., Illinois.

## GOOD NEWS FOR DIXIE! SIMPLICITY HIVES,

Sections, Extractors, Smokers, Separators, &c., of Root's Manufacture, Shipped from here at ROOT'S PRICES.

Also S. hives of Southern yellow pine, and Bee-Keepers' Supplies in general. Price List Free.

J. M. JENKINS, WETUMPKA, ALABAMA.  
3-24db

## PREPARE FOR WINTER.

We have unequalled facilities for manufacturing the Root chaff hive at a great reduction from ruling prices. Mr. Zeno Doty, Grafton, Neb., writes July 9th, "Your material, make, and price is far better than I can get anywhere else." Send for price list and special prices for this fall. 16tfdb

A. F. STAUFFER & CO., Sterling, Ills.

## GERMAN CARP FOR SALE.

SPAWNERS AND SPRING HATCH.

Correspondence Solicited. Address 17-18d  
DR. S. E. ADAMS, Spring Hill Park, Peoria, Ill.

## 2 H. P. ENGINE FOR SALE.

We have at the factory in Elmira, N. Y., a 2 H. P. engine and boiler that has been rigged up exactly as good as new in every respect. It ought to bring full price of a new one, but in order to get it off our hands we offer it for \$150.00.

A. I. ROOT, Medina, O.

## DISSOLUTION NOTICE.

Notice is hereby given, that the partnership heretofore existing between E. M. Kennedy and R. B. Leahy, manufacturers of and dealers in apianary supplies, has been this day, by mutual consent, dissolved, E. M. Kennedy retiring. All liabilities of the firm are payable by R. B. Leahy, and all bills due the firm are payable to R. B. Leahy, who now owns and controls the business.

ELI M. KENNEDY.  
R. B. LEAHY.

Higginsville, Mo., Aug. 25, 1886.

## FIRST IN THE FIELD!!

## The Invertible Bee-Hive

## Invertible Frames,

INVERTIBLE SURPLUS - CASES,

TOP, BOTTOM, AND

ENTRANCE FEEDERS.

Catalogues Free. Address

J. M. SHUCK, DES MOINES, IOWA.

4-3db

## THE CANADIAN BEE JOURNAL.

WEEKLY, \$1.00 PER YEAR.

JONES, McPHERSON & CO., Publishers, Beeton, Ontario, Canada.

The only bee journal printed in Canada, and containing much valuable and interesting matter each week from the pens of leading Canadian and United States bee-keepers. Sample copy sent free on receipt of address. Printed on nice toned paper, and in a nice shape for binding, making in one year a volume of 832 pages. 9tfb

## 100 FINE PRINTED ENVELOPES,

white, or assorted colors, with name, business, and address on, all for 40 c.; 50 for 25 cts. By mail post-paid. Cards and letter-heads at same prices.

17-22db Address G. F. ROBB, Gilman, Iowa.

## VANDERVORT COMB FOUNDATION MILLS.

Send for samples and reduced price list.

2tfdb JNO. VANDERVORT, Laceyville, Pa.



## SURE TO SEND

FOR MY NEW

PRICE LIST FOR 1886,

Before purchasing your Bee-Supplies. Cash paid for Beeswax. 7tfdb

A. B. HOWE, Council Bluffs, Ia.

## MUTH'S HONEY-EXTRACTOR, SQUARE GLASS HONEY-JARS, TIN BUCKETS, BEE-HIVES, HONEY-SECTIONS, &c., &c. PERFECTION COLD-BLAST SMOKERS.

Apply to CHAS. F. MUTH & SON,

CINCINNATI, O.

P. S.—Send 10-cent stamp for "Practical Hints to Bee-Keepers." 1tfdb

## FOR SALE. PURE ITALIAN Bees & Queens.

Untested queen, \$1.00; two or more, 75 cts. each. Tested queens, \$2.00 each. Full colonies, in Simplicity hive, with tested queen, from \$4.00 to \$10.00. Three-frame nuclei, with untested queens, \$2.00; with tested, \$3.00. For July, August, September, and October, address or call on

Residence, Little Muskingum. BENJ. J. COLE,  
16-20db Marietta, Wash. Co., O.

# BE SURE

To send a postal card for our illustrated catalogue of **APIARIAN SUPPLIES** Before purchasing elsewhere. It contains illustrations and descriptions of every thing new and desirable in an apiary,

**AT THE LOWEST PRICES.**

**ITALIAN QUEENS AND BEES.**

**J. C. SAYLES,**

2 tfd **Hartford, Washington Co., Wis.**

**WARRANTED** Italian queens at 60 cents each. They are young, and are now ready to ship.  
J. H. JOHNSON, Middaghs, Northamp. Co., Pa.

## GOODS NEAR YOUR HOME, AT A REDUCTION FROM REGULAR PRICE.

We have the following lot of goods at the places named, for which we want customers. Now, it is altogether likely that there is some one located not very far from where these goods are who will be needing just such articles, especially if he can get them a little lower than the regular price, and doesn't have to pay much freight charges on them. In hopes that there are such persons, we append a list of the articles for sale, giving the present value of the goods and the amount we will take for each lot entire. We give a number to each lot, and the name of the place where they are being held, subject to our order. Remember they are all perfect goods, just as fresh and new as if shipped from here. Remember, also, that at the price we offer them we can not break lots; each lot must go entire. In making your orders, please give the number of the lot as well as the articles contained in it, and thus help us to avoid mistakes.

- No. 1. Aplington, Iowa.  
Ten 2-story portico hives, complete, in flat, for comb honey, including m. c. frames, wide frames, sections, separators, thin fdn. for sec., 7 lbs. brood fdn., and enamel sheets. The lot foots up to \$23.30. We will sell it complete for.....\$22.00
- No. 2. Union City, Ind.  
13 combined shipping and honey crates flat; 90 tin separators for above crates; 26 pieces glass for above crates; 40 metal-cornered brood-frames in flat. Present value, \$4.50; will sell for.....4.00
- No. 5. St. Paul, Mo.  
22 48-lb. shipping and retailing cases, in flat, without glass. Worth \$3.96; will sell at.....3.75
- No. 7. Nassau, N. Y.  
200 wide frames, for 8-lb. sections, in flat. Worth \$4.00; will sell for.....3.75
- No. 8. Riverside, N. J.  
500 1-lb. 7-toe-foot sections. Worth \$2.00; will sell for ..1.75
- No. 9. North Walton, N. Y.  
100 metal-cornered frames, in flat. Present value, \$2.50; will sell for.....2.50
- No. 12. Caribou, Maine.  
900 sections, 4½ x 5 x 1 7 16 w dc, open on all four sides. Present value, \$4.50; will sell for.....3.50
- No. 13. Canal Fulton, Ohio.  
Eight chaff hives, complete, for comb honey, in the flat. Present value \$24.00; will sell for.....2.20
- No. 14. Delaware, Ohio.  
35 bottom-boards for Simp. hives; 210 tin separators for combined crates. Present value, \$8.75; will sell for.....7.50
- No. 15. Foster Brook, Pa.  
100 wired m. c. brood-frames, in flat, including wire and tin bars. Present value, \$3.00; will sell for.....2.75
- No. 16. Johnson City, Tenn.  
One No. 7 honey-extractor, with basket, only 15 in. deep. Present price, \$8.00; will sell for.....6.00
- No. 17. Cairo, Va.  
One 2 story Simp. hive, rigged complete for comb honey, and 5 lbs. fdn., ½ thin, for sections, and ½ for L. frames. Present value, \$5.25; will sell for.....4.75
- No. 18. Elmira, N. Y.  
One 2-H. P. engine and boiler complete. This has been used some, but has been put in as good shape as when new. Price of a new one, \$175.00; will sell this for.....\$150.00
- No. 19. La Salle, Ill.  
6-in. foundation mill. Present value \$13.50; will sell for.....11.50
- No. 20. Glenville, Conn.  
15 24-lb. single-tier shipping-cases in the flat, with 30 pieces of glass for same. Present value \$2.00; will sell the same for.....2.25

**A. T. ROOT, Medina, Ohio.**

## HELP! HELP! HELP!

Me develop my honey-trade in Philadelphia by consigning me your honey. Those I have sold for, express satisfaction.

## TODD'S HONEY CANDIES

Sample package mailed on receipt of 25 cts. Special rates for quantities for fairs.  
1618db **ARTHUR TODD, 1910 Germantown Ave., Philadelphia, Pa.**

**DADANT'S FOUNDATION FACTORY, Wholesale and retail. See advertisement in another column.** 3btfd

## RED-CLOVER ITALIANS.

During the season just passed, Moore's Italians have roared away on red clover, in countless thousands. Reduced prices: Warranted queens, each, 80 cts.; per ½ doz., \$4.50. Tested queens, \$1.25. Safe arrival and satisfaction guaranteed. Circular free. 15tfdb **J. F. MOORE, MORGAN, FENDLETON CO., KY.**

## THE AMERICAN APICULTURIST

Sent one year, and a tested Italian queen, to each subscriber; all for \$1.50. Sample copies free.  
15tfdb Address **HENRY ALLEY, Wenham, Mass.**

## PURE ITALIAN QUEENS.

Tested queens, \$1.50 each; untested, 70c each; 3 for \$2.00; 5 for \$3.00. All bred from a select imported mother. By return mail.  
15tfdb **D. G. EDMISTON, ADRIAN, LEN. CO., MICH**

## ATTENTION, BEE-KEEPERS!

Now is the time to Italianize cheap. Having all my orders filled to-date, I will sell fine queens, from my well known strains, at the following very low rates.

1 queen, - - - \$ .80	1 tested queen, - - - \$1.50
6 " - - - 4.50	6 " - - - 8.00
12 " - - - 8.00	1 select tested queen, 2.00

Safe arrival of all queens guaranteed, and queens sent by return mail. Address  
16tfdb **WM. W. CARY, COLERAINE, MASS.**

## SECTIONS.

Western headquarters for bee-men's supplies. Four-piece sections, and hives of every kind, a specialty. Flory's corner-clamps, etc. Orders for sections and clamps filled in a few-hours' notice. Send for sample and prices.

**M. R. MADARY,**  
22 21db **Box 172. Fresno City, Cal.**

## CHEAP!

Full colonies in Simplicity hives, and honey enough to winter, for only \$4.50. Will ship last of July.  
11tfdb **DAN WHITE,**  
**NEW LONDON, HURON CO., OHIO.**

## HOW TO RAISE COMB HONEY.

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Vol. XIV.

SEPT. 15, 1886.

No. 18.

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#### A FEW VALUABLE SUGGESTIONS FROM J. A. GREEN.

##### SOLAR WAX-EXTRACTORS.

**I**N the extractor I sent you, I left off one important feature in order to make an extractor more easily shipped and less easily broken. This was the "side reflector." This is an important adjunct, and this season's use has convinced me that I would not want to do without it.

To make it, take a thin board, or combination of boards about four inches shorter, and an inch narrower (or vice versa), than the inside of the cover. Cover one side with tin, and on the other side put a cleat in the middle, or one at each end, projecting three inches on one side. Now nail a "pocket," or small box, on each side of the extractor, blocking it away from the side so that the sash can be raised without interfering with the reflector. The reflector is to be placed on the west side in the morning, and changed over to the east side at noon. At night it is laid on the sash, and the cover closed down over it.

Of course, this side reflector is not of much use if the extractor is kept facing the sun all the time; but a busy man can not well do this.

In making beeswax in times past, I have been much troubled with "spongy beeswax," a sort of combination of wax and water that would sometimes be two or three inches thick on the bottom of cakes of wax. It seemed to be caused by boiling, or, at least, too much heating, in combination with water. Sometimes the wax would be granular, as I believe you have mentioned. In both these cases the wax seemed good enough, only it

appeared to have got tired of assuming the old forms. I find that I can make such wax "behave" by running it through the solar extractor. I have also succeeded in getting a considerable quantity of good wax from the scrapings of wax cakes that I had formerly supposed entirely worthless. "Keep it before the people," that the solar wax-extractor affords the best and most convenient way of making beeswax yet invented.

Speaking of extractors reminds me that I have never made any report on the rim you sent me for the top of my honey-extractor. I have just been extracting some very thick honey, which has afforded a good test for it. It does not entirely prevent the flying over the top of the can when the honey is very thick or not very warm; but under ordinary circumstances it does away entirely with this very annoying feature.

##### SMOKER FUEL.

I have used planer shavings in the Clark smoker very successfully. In the spring, and fall too, I have used with great satisfaction a fuel that I have never seen mentioned by any one else. This consists of the dry leaves of the soft maple. These are very soft and fine, and I use them largely for packing hives. Being always handy, it is very convenient to use them as fuel. With a little care they answer the purpose excellently, and last much longer than one would suppose who had never used them. To keep such light fuel from going out in the Clark smoker, it is necessary to use an admixture of something more solid. When using leaves, I start the fire with rotten wood and then use alternate fillings of leaves and wood. When using shavings in the Clark smoker I mix them half and half with good rotten wood. This

mixture burns well, and holds fire well, although it does not do as well as the shavings alone in the "Doctor." W. Z. Hutchinson, in telling how to light the smoker, just misses a convenience which I would not think of doing without. This is the use of kerosene in kindling the fire in smokers. Have a zinc oiler full of kerosene, handy to the place where you light your smoker, and squirt a little of it on that handful of shavings; light your match, drop it in—no need to "carefully set it on end"—and puff away. If you have no oil-can, use a small bottle with a quill through the cork. A very little oil is enough.

Mr. Heddon tells us to use wet shavings as a spark-arrester. Instead of these I prefer to use a handful of stiff wiry grass or weeds—not too coarse nor too succulent, coiled in the cap of the smoker. Knot-grass is best. This coil of weeds completely prevents the throwing of sparks, and you can tell by the smell when your smoker needs filling. I used to try to get along with as little smoke as possible. Now, I want a smoker that will throw smoke enough in two or three puffs to take the fight out of the worst hybrids. If the bees are willing to be handled without smoke, all right; but if they show fight I make them behave, and waste no time about it. A good smoker is one of the best time-savers a bee-keeper can use, to say nothing of the extra comfort over a poor one.

Dayton, Ill., Sept. 10, 1886. J. A. GREEN.

Thanks, friend Green, for the improvement you suggest for the solar wax-extractors. We have found the granulated wax a very serious trouble, and we have never succeeded in doing any thing with it except by mixing it with a considerable quantity of good wax, and stirring it until it behaves itself, as you express it. If the solar wax-extractor will restore it, it is indeed a great fact.—No doubt your suggestion of dry leaves for fuel for smokers is a good one: but, my dear sir, the idea of filling a small oil-can with kerosene, for kindling fires of any kind, it seems to me, is something of wonderful value. Why, you can give the hired girl, or the cook, even if the latter be fresh from foreign shores, such an arrangement to light her fires with, and she *can't* do any harm. Why has no one ever thought of it before? Our five or ten cent oilers will do it exactly. On some accounts I should prefer the five-cent one, because the quantity of oil would not be sufficient to set any thing afire, if left on the stove, or dropped into the stove. Your idea of stiff wiry grass for a spark-arrester is also a valuable suggestion. See *Our Own Apiary*, this issue.

### INTRODUCING QUEENS.

#### A DRONE-TRAP NEARLY EQUAL TO ALLEY'S.

**I** HAVE had quite a time introducing queens. I have introduced four the past month. One of these the colony rejected five times. I then formed a nucleus of young bees, and they took her without a moment's parleying. Another one was refused by another colony four times, whereupon I introduced her to the colony that had so cordially rejected the first-mentioned queen, and all was as peaceful as a summer morning, and

I was relieved, for she was a fine one. The instructions for introducing accompanying Peet's cage would be quite incomplete were it not for your added note. Had I not followed it I should have lost, no doubt; for at the expiration of 2 days I found her balled, and a more persistent cluster I never had to dissolve. I deluged them with tobacco smoke, and finally had to rake them apart with a twig, and then they seemed loth to yield. I have found Alley's plan as successful as any. The queen to be superseded is removed from the colony; when the bees are back and quieted, the cage containing the new queen is placed on the combs under the mat, in such away that the bees may have access to the food. Then a small amount of tobacco is blown into the hive, thus scenting the bees and queen alike. In the course of two hours he says (though not in a single instance have mine been liberated under 24, and I used his prepared cage), the queen is released; and as the colony has not had time to miss their old queen, the new one is successfully introduced. I would add, that where there is delay in her release, as has been true in my case, an hour or two before she emerges I would fumigate them again, as the first smoking will have entirely lost its virtue. Of course, a portion of the food could be removed, and a more speedy release effected. Last year all my queens were purely mated. This year there is a new comer, a few blocks away, who keeps blacks, and in almost every case this year the queens have been impurely mated. He has but a few colonies, and I purpose queening them for him with pure Italians. I think this would obviate the difficulty.

And now about my drone-trap. It is hardly equal to Alley's, but good, nevertheless. It is in the shape of a brood of quarter-grown Leghorns. I noticed they frequented the bee-yard, and my suspicion was aroused, so I watched them. I was soon struck with dismay at seeing them pluck up bee after bee with a dexterity that was surprising. I disliked to dispose of them, for they were fine ones, well marked. The thought struck me, "Perhaps they are taking only the drones," for I noticed they received no stings, and, sure enough, after long and close watching I found they did not molest, or even notice the workers; so in place of a pest I had a prize. How remarkable! and none but the Leghorns would be up to it. It seemed strange that they had learned so readily to distinguish between the "lancers" and the civilians; and now a question: Can a chicken swallow worker-bees without imperiling its life? I have heard that they do; but is such a thing positively known?

GLEANINGS grows in favor with me. It is second to none.

FRANK C. BLOUNT.

Lawndale, Ill., Aug. 19, 1886.

Friend B., if I am not mistaken, common fowls may learn to catch and kill worker-bees; at least, such facts have been furnished, supposing they were worker-bees. As many of the feathered tribes catch and kill worker-bees when the bees are gorged with honey, why may not common fowls? My idea has been, that the fowls mash the bees with their bills until the bees are unable to sting. Of course, it requires pretty thorough mashing to prevent the sting from working of itself, after the bee is dead. If, however,



it should be proven that it is only *drones* they take, we can well afford to encourage fowls about the apiary.

### FOUL BROOD.

SOME BOLD SUGGESTIONS IN REGARD TO ITS CAUSE AND CURE.

**M**R. EDITOR:—You so frequently receive communications suggesting such wild ideas and new ideas—which are not new—that it is very probable you will regard what I have to say as simply an addition to the wild ideas before mentioned. This subject, foul brood, is, without a doubt, the greatest bugaboo to the bee-keeping fraternity; but when bee-keepers become thoroughly aware of its nature, and the causes which bring it on, then will it dwindle into insignificance, and will be of less importance to the bee-keeper than the marketing of his honey.

Last year I had the disease among my bees in its very worst form. I could smell the odor given off by the hives, thirty yards from the apiary. I tried both phenol and the starvation method of cure; but it seemed the more I did for them, the worse they got. I tried the phenol cure until I had used 2 lbs. with a very discouraging result. I tried the starvation plan on thirty, but did not cure any—except two that I starved to death.

While I was trying to cure some by the remedies above mentioned, a period of about ten weeks, I not only kept a record of those which I tried to cure, but of those that I did nothing for. Any one who has read a great deal on the subject can judge of my perplexity when I discovered that the colonies affected that I did nothing for were in a better condition than those I doctored. Since I made the discovery above mentioned, I have had a new idea as to the nature of the disease. This idea has been so confirmed by what I have read, and by later experience, that I am now confident I can state some new and valuable facts on the subject.

Foul brood is caused, chiefly, by an inferior quality of honey or honey-dew; but it is sometimes caused by physical defects in the queen, from which the larvæ inherit a constitutional weakness. The former kind, or class, I should say, breaks out in several colonies, and sometimes every colony in an apiary at once (which accounts for Mr. D. A. Jones's belief in spontaneous generation). Of the latter class, you will find only one or two in an apiary at one time. It is cured by simply replacing the queen. When the disease is caused from bad honey, the best thing to do, in nineteen cases out of twenty, is to let it alone. But if you want to cure it, take the honey from them, boil it, and give it back; or, better still, give them nice honey from flowers, or sugar syrup.

Some might say that I ignore the fact that learned scientists have traced the cause of the disease to bacteria; but I do not. We all know, who read the bee-papers, that the disease is accompanied by bacteria; but who can say that bacteria is the prime cause of the disease? No one. To say that it would give a hardy frontiersman the consumption if he were inoculated with the bacteria that accompanies that disease, would be about as reasonable as to say that one spore from

the foul-brood bacteria would affect a healthy larva.

Can any reader of GLEANINGS think of any hypothesis, outside of the facts I mention, with which the different methods of cure can be reconciled? D. A. Jones cures by after-feeding, and not by starvation. Frank Cheshire effects a cure by feeding and not by phenol. Those who think they cure the disease by thyme, camphor, or salt, simply let it get well itself. Then there is N. W. McLain's method—a sure one; and C. F. Muth's method, another sure one; either one of which would be sufficient without the medicine. I could fill a book with proof of the assertions I have made; but I have said enough now to raise the ire of a great many, who, once getting an idea in their head, can never get it out. However, I am going to hazard just one more, and here it is: When there is a good flow of honey from the flowers, you can not hurt a populous colony of bees if you were to give them ten combs of the most malignant type of foul brood, in addition, of course, to the combs they have already.

Mobile, Ala., Sept. 4, 1886.

GEO. H. HOYLE.

Friend H., you almost startle me by your reasoning; and if you are not exactly on the right track, I feel sure you are pretty close to it. For years back, the conviction has again and again been forcing itself upon my mind that the remedies prescribed and used for different diseases of the human family, in a great majority of cases have nothing to do whatever with the recovery of the patient. Sometimes some trifling thing, in some remote way connected with the treatment, has been the cause of the cure, in a way something like what you suggest in regard to foul brood. Let us go slowly, and let us have much charity while we push our investigations. I believe it is one of the hopeful signs of the present age, that we are more and more using reason and common sense, and are discarding blind hits in the dark.—guessing that a certain medicine *may* hit the spot.—I know you are right in one of your propositions; namely, that something strikingly like foul brood may exist in the hive because of a physical defect in the queen; and that changing the queen furnishes the cure. We have had such cases in our own apiary; but when shown to me I have at once decided where the trouble was, and effected a complete cure by giving the colony a good queen.—In regard to the second case, that it is produced by some kind of honey that kills the brood at such a stage, it seems to me this may be partly true, but not always the trouble; for instance, how can it spread from one apiary to another by a purchase of stocks, old hives, or fixtures? Scalding the food, whatever it is, would probably prevent it from going further.—Right here I want to tell you some of the difficulties we met at this point in our apiary in stopping it after the plan we have been working on. We at first concluded it was unsafe to open the hive in the day time, because the robbers might slip in and carry off some of the infected honey; therefore we decided to use a tent. But our apiarist soon declared the tent was even worse than no tent, because bees, returning from the fields, on finding their hive covered with a tent, would, &

great many of them, carry their loads of honey into the hives adjoining on all sides. This, I have known for many years, was true. It requires the utmost caution and care to prevent the disease from spreading to hives adjoining the infected one, and I begin to think, of late, that perhaps the only really safe way for a person of average skill and intelligence is to take the hive after dark, when every straggling bee is at home, and burn up all the bees, combs, and stores, unless, indeed, we adopt your plan, and let it die out of itself. But, my good friend, please consider that hundreds of beekeepers have been already adopting this latter plan, and it did not "die out," either—no, indeed. It spread until it ruined not only every colony in that apiary, but, when robbers set in, almost every colony in adjoining apiaries, in spite of every thing the owners could do. By all means, let us have reason and common sense applied to the matter, but don't let us get reckless.

### PROFIT IN BEES.

#### HOW TO COMPUTE IT.

**N**ONE is apt to conclude, from a superficial observation without experience, that all the honey that can be secured from a number of hives is clear profit. If there were no work attached, and no investment necessary, this conclusion might be correct. While taking these into consideration we find that some years we are able to secure a much larger profit than others, while occasionally the bees prove an actual loss. In making up the amount of profit and loss we must keep an account, first, of the money invested in hives, bees, and such other necessary appliances as we find necessary. We must allow a per cent for interest on the money invested, as well as a sinking fund for the wear and tear. Then our time must be worth something. True, we may be able to do the greater part of the work at odd times, so that some often conclude that this should not be counted; but this time is certainly worth something. If we were not attending to the bees we could be doing something else, so that the only correct way is to charge the profit-and-loss account with whatever the time required is worth. If you are required to feed them at any time, this also should be charged for what it is actually worth. In this way we know what the honey we secure costs us. If a patch of buckwheat, clover, or other plant, is sown for the express purpose of feed, this also should be charged.

Whatever honey is taken, whether used in the family or sold in market, should be credited at whatever it is worth. If some of the bees are sold, this also should be credited. Any expense incurred should be charged; and whatever is received for any thing should be credited; and the difference between the two will show the amount of profit secured or loss sustained.

With good management, bees, of course, can be made profitable; but a little experience will soon convince any one that it is not all profit; while if properly managed, with any thing like a fair season, bees may be made to yield a very large profit on the money invested.

N. J. SHEPHERD.

Eldon, Mo., Sept. 1, 1886.

### POLLEN FROM COTTONWOOD-LEAVES.

ALSO MORE ABOUT OPEN-SIDE SECTIONS, AND NO SEPARATORS.

**D**EAR EDITOR AND GLEANERS:—For several days past I have heard during the forenoon a loud roaring of bees in a small cottonwood-tree near my apiary. I at first thought they were gathering honey-dew, as I have noticed a slight sprinkling of this substance in a few hives. Upon closer examination I found that they were scraping a yellow substance from the surface of the leaves, and packing it in their pollen-baskets. The leaves of this tree are almost yellow with this substance, while those of larger cottonwoods near by show no traces of it, and I saw no bees on them. There are, of course, no blossoms on the trees at this season. I inclose a few of the yellow-coated leaves. An explanation will be appreciated.

#### SECTIONS OPEN ON ALL SIDES.

On page 689, after speaking of my new open-side section, friend Greer says: "It seemed to be intended to be used without separators, and, in consequence, with sections both wide and narrow. I had bulged combs, so I have attempted to devise a separator that could be used with open-end sections."

Friend G. seems to have overlooked the fact, as explained in my pamphlet, that, in the section referred to, special provision is made for the use of ordinary separators, which renders his improvement in separators unnecessary. The only difference is, that the slots all around are a little shorter and deeper. They are 3 inches long, and scant  $\frac{1}{4}$  inch deep, which enables the bees to pass freely, not only on both sides of the separator from one section to the other, but also between the outside row of sections and the side of the case. The wide openings also seem to serve as a more perfect guide to the bees, causing them to build straighter combs, and with less bulging. In fact, after learning how to use these sections, I have abandoned all separators in my own apiaries, as I find I can secure as perfect combs with far less labor and expense than with separators. I find that sections half full of fdn. produce more perfect combs than filled ones.

OLIVER FOSTER, 296—325.

Mt. Vernon, Linn Co., Ia., Sept. 7, 1886.

Friend F., the yellow substance which you find on the leaves, and which the bees are using as a substitute for pollen, is a sort of fungoid growth, similar to the reddish substance often found on the leaves of raspberries, and which the bees have repeatedly gathered as a substitute for pollen. It would seem from this and other similar reports that bees can use a wide range of animal and vegetable secretions in the way of pollen, or as a substitute for pollen from natural flowers. Our older readers will remember that our bees were at one time gathering dust from the shelves of a cheese-factory, and that this dust, under the microscope, proved to be microscopic forms of animal life.—If your arrangement will enable yourself and others to get nice comb honey without the use of separators, it is something of more moment than we at first supposed. We should be very glad to have further reports from you.



## FOUL BROOD.

## THE DESTRUCTION PLAN VERSUS THE OTHER REMEDIES.

**A**T the close of the honey season last year I discovered that every colony in my apiary was more or less affected with foul brood. I had never seen the disease, and, of course, had no knowledge of it except what I had obtained from reading, and what I had heard in the discussion of the subject at the National Bee-Keepers' Convention in Cincinnati, Oct., 1882. It seemed to be the prevailing opinion of the members of the convention, that the surest remedy for the disease is to kill the bees and burn the hives and combs. I admit, that Mr. Jones, who was present, said that he could cure it by the so-called "starvation plan;" and Mr. Muth also asserted his confidence in the efficacy of salicylic acid; but the destruction method seemed to be the most popular with the bee-keepers present. I accordingly followed the destruction plan, with the exception of two that were very strong in bees, and had not a very great extent of foul brood. I had not time to try the starvation plan, so I put them in the cellar, with the intention of trying it this summer, if they were alive in the spring. They wintered well. During the winter I heard of Cheshire's pamphlet on foul brood. After reading it I concluded to try his remedy, phenol, on my affected colonies, when I should set them out in the spring. Afterward I read in the *Bienen Zeitung*, a German bee-journal, that powdered brown coffee is a powerful antiseptic, and a destroyer of foul brood. I now had two remedies, phenol and coffee, and I determined to try phenol on one colony and powdered brown coffee on the other. Accordingly I gave phenolated syrup (1 part to 500 parts), with a feeder placed over the cluster, and covered with a cushion. I did it as soon as I set them out in April.

I applied the coffee finely ground, by removing the combs one at a time and taking the powdered coffee in my hand, sprinkling it over the combs, bees and all, and into the cells and all the crevices and cracks, and over the tops of the combs when replaced. I treated the colony in this manner three times, at intervals of about a week.

The colony treated with phenol took about half a gallon of the medicated syrup. The last of last month I examined both colonies, aided by my friend, an experienced bee-keeper, C. Spangenberg, of this city, who has had some experience with the disease, and we found not only no trace of the disease, but both were in a healthy and flourishing condition.

From these tests it seems that each remedy is equally efficacious. Coffee is to be found in every house, but phenol is not so easily obtained, and coffee can not possibly injure the honey or the bees. I think the bee-keeping world is to be congratulated in having so pleasant a remedy, so easily applied, and so efficacious. I hope all who have the disease will at once try coffee. Grind or powder it very fine. J. W. VANCE, M. D.

Madison, Wis., Aug. 23, 1886.

Friend V., before you read what I have to say in regard to the above, please remember that I have very little faith in remedies, unless I can see some consistent reason for applying such remedies. And now excuse

me for saying that I can not believe your finely ground coffee had any effect whatever over the foul brood. The phenol may have had some effect—I do not know; but as a good many have reported that they could not see that it made any difference, excuse me for being somewhat skeptical in regard to phenol also. Do you ask, how, then, the disease came to disappear? I think it disappeared of its own accord. A friend has written us, that, in order to test a remedy for foul brood, he used it on a part of his colonies, and used nothing on the rest. After some time, on finding the disease had disappeared on the treated colonies, he was ready to shout eureka, but concluded to examine those not treated before doing so. To his astonishment he found the disease had disappeared from all—those treated, and those not treated. Now, a great many experiments are made like the one you note above. The disease is gone, it is true; but how can you be sure the coffee or phenol either had any thing to do with its disappearance? See also last paragraph of article from E. C. Long, on page 701, last issue.

## BRUSHING BEES OFF THE COMBS, VERSUS SHAKING.

## CONTRACTING BROOD-CHAMBERS NOT SUCCESSFUL WITH MRS. AXTELL.

**I**N last GLEANINGS it was remarked, it did not so anger bees to shake them off the combs as it did to brush them off. True, it does not; but is there not danger of injuring the brood to shake it too hard? We know that queens' wings may be thus injured, and why not worker-bees? I generally shake them enough to shake the clusters off, and then stand to one side, or, rather, corner, of the hive, generally the southeast corner, of hives facing the south. Hold the comb in the left hand, and, with a soft grass brush (never a feather brush, if grass or weeds can be had), brush the rest of the bees off, being careful not to stand in the bees' way, so they can not alight in front of hive. Getting in their way also angers them.

This spring we thought we would try small brood-nests after swarming, so as to get most of the honey in the surplus-cases, as some are advocating. We had tried it before, but thought we would try it again, as it is claimed we did get most of the honey in such hives in the surplus-cases; but those colonies did not equal those hives that had their full number of combs. Before the spring harvest had closed, those colonies were smaller, consequently they gathered less honey. If a colony gets run down in numbers in mid-summer, with us, it does not of itself build up in time for the fall crop, generally commencing the last of August. Mr. Axtell and I conclude that seven Quinby brood-frames are none too many for this locality, except in the winter and early spring; then four or five are better; but seven and eight full of sealed stores are none too many to bring them in the best of condition through winter and spring, taking away empty ones in the spring and giving full ones, or adding a full one if those in the hives are full of brood. In order to have large colonies ready for harvests (large colonies are the paying ones for comb honey), we need in this locality to keep them built up, accord-

ing to our opinion. Different localities need different management, no doubt. MRS. L. C. AXTELL.  
Roseville, Ill., Aug., 1886.

Thanks, Mrs. A. No doubt you are right in regard to the danger of contracting the brood-nest too much. We believe in large colonies, and I have never yet seen them too large, providing the bees were all the progeny of a single queen.

### FLAT-BOTTOMED FOUNDATION VERSUS OTHER MAKES.

THE ECONOMY OF THE LATTER OVER THE FORMER,  
PROVEN BY CAREFUL EXPERIMENTS.

**I** AS last season I used flat-bottomed foundation for surplus honey. The bees, in trying to turn the flat bottoms into the natural form, spoiled some and neglected others. Having seen that, I looked up what you say on page 56 of your A B C, and, consequently, I made up my mind to get a foundation-mill which I could use for foundation for brood-nest and for surplus honey, as I had suspected the purity of the wax of some foundation for brood-nest, which I had received from England. I ordered a machine with ten-inch rollers, from you; and when I received it, in January last, I bought some pure wax and tried to make foundation for brood-nest. My first trial failed, as the wax sheets were so hardened by the cold weather that they generally broke. I read over the instructions given in the A B C book, and decided on shutting the windows and doors, and to place a big fire in the room. This, however, made but little difference; and so after a while I thought of dipping the wax sheets in warm water, about 110° F., just before passing them through the rollers. I tried this plan and the result was perfectly satisfactory, so that the sheets came out from the rollers very easily, and the foundation was perfectly even and nice.

In the latter part of February I gave to each one of my eight strongest stocks of bees two full sheets of comb foundation, the one being of my own make, and the other of the lot I had received from England, I placed the one at one side, and the other at the other side in the brood-nest of each hive. About ten days after, on examining I found that the foundation I had made was all accepted by the bees, cells having been drawn out nicely, and filled in with eggs, etc., and that the foundation I had received from England was all sagged, and only the cells at the lower part were half worked out. These I left in the hives for about two months, and by so doing I have been able to ascertain that the bees had been obliged to use them by thickening the upper parts of the foundation with their own new wax in order to prevent the falling-down of the above-mentioned combs, of which only the lower parts were occupied, and the upper parts were out of shape.

In March last I bleached some pure wax in the manner explained on page 288 of the A B C book, of which I made some foundation for the section boxes just in the same manner as I had made those for the brood nest. This foundation was of medium thickness, and its color was as white as snow; and having still on hand about three pounds of the flat-bottomed foundation I fixed full sheets of both in the section boxes, and in April I supplied the

bees with both kinds mixed together in the crates for perfect trial.

About a week after, on examining the same, I saw that some of the flat-bottomed foundation was untouched, and some, especially that in the center of the crates, was in a bad state, so that the bees, in trying to turn the bottoms into the natural shape, had partly spoiled them. While all those made by me were accepted, and their cells or walls were beautifully drawn out, which looked very pleasant to the eye, and the bottoms of the cells were so thinned out that I could hardly see any difference between mine and the natural comb, except that mine were less transparent, owing only to the air, or to the imperceptibly fine spaces created in the body of the wax by its swelling when dipped in warm water, which air, on account of the warm and soft state of the wax, did not escape by the pressure of the rollers of the machine, and it caused the wax to remain in such a condition that the bees would hardly find any difficulty in scratching the thick parts of the foundation and using the shavings for the building of the walls. When I was rolling, Mr. F. Benton was present, and he told me that I was going to have a fishbone in my surplus comb honey, and so I thought that would have been the case; but after it was worked out by the bees I was very glad to see the unexpectedly excellent results.

Herewith I send you samples of the flat bottomed, and also of my own make of foundation, as worked up by the bees, that, in the event of any progressive bee-keeper wishing to ascertain the truth of what I have stated, he may be able to see the results with his own eyes, and thus he will be better able to judge than by explaining the matter scientifically. I would also beg all bee-keepers who love progress to try my system of rolling the wax, and discuss the method for the benefit of all, by taking under their careful consideration the state or shape of the wax scales secreted by the bees, and the manner in which they are worked for the comb.

M. G. DERVISHIAN.

Larnaca, Cyprus, August 10, 1886.

Friend D., your experiments have resulted just about the same as our own. The samples you send us are beautifully thinned at their bases; and I believe no one has yet tried to explain why bees sometimes scrape down the base so thin, and at other times do not. The specimens you send make it very plain indeed that extra labor is required where the bees have starters of flat-bottom foundation.

### COLOR AND QUALITY OF QUEENS.

FRIEND DOOLITTLE'S EXPERIENCE IN TESTING THE  
DIFFERENT RACES.

**C**ONTINUING the subject of my article on page 643 of GLEANINGS for Aug. 15th, we have next in order the color of the queens of the different races of bees. The queen-bee of the German race seems to be the most constant in color of any of the bees which have come under my notice, all of which are of a very dark brown upon the upper side of the abdomen, while the under side of the same is of a yellowish brown. Right here I would say, that, in speaking of markings, I shall notice only those which are fixed, or permanent, as are those colors on the horny scales, or segments of the abdomen; for nearly all other markings are of



hair or fuzz, and are soon worn off, so that an old bee does not look nearly as showy as a young one, when the color of said fuzz is new and bright. The head and thorax of all the races of bees are very much alike, except as the color of this fuzz gives them a lighter or darker appearance. To be sure, the Cyprians have a bright spot, or shield, as it is called, at the back of the thorax between the wings; but as I find this same spot on the best-marked Syrian and Italians, I do not see how it can be used as a test for purity of the Cyprian race, as some claim for it. Hence the abdomen of the bee is the place we are to look for the markings of the different races. With me, the markings of the Cyprian and Syrian queens are very much alike, except that the strips or rings on the Cyprian queen have more yellow on them than do the Syrians; and said yellow is of a bright orange color, while that on the Syrians is less bright, and often dusky. Every segment to the abdomen has both yellow and black upon it, unless it be the last one at the tip, which generally is nearly or quite all black, or very dark brown. The queens to these two races of bees are next in constancy of color to the German queens. The few Carniolan queens which I have reared run from a jet black to a light brown, one of which was fairly a blue-black, like a crow, or a crow blackbird, as we call them here. However, I did not keep this variety of bees long enough to give a decided opinion of the color of either bees or queen.

We next come to the Italians; and, without wishing to injure anybody's feelings or business, I am compelled to say that I can consider them as only a hybrid or mongrel race. There is no constancy of color, either in the queens or bees. Furthermore, I believe that it is this mongrel quality which gives them their good qualities as honey-gatherers. Surely no race of bees can be said to be *pure* whose queens vary in color from that of a German queen to a bright golden-orange color the whole length of the abdomen, some of the best specimens not even having a particle of black on the extreme tip, or point. Again, the workers vary from a dark chestnut color, so nearly like the German bees that only an expert can tell the difference, to those showing the fourth and a few even the fifth band of golden yellow. I used to think that queens of the Italian variety could be found that would duplicate themselves; but I have long ago given that up. However, the queen which I prefer for a breeder is one which will give the larger share of her young queens of a bright orange color. Such queens, mated with drones from a like mother as to markings, though in no way related as to blood, give me the best results in honey of any bees I have ever tried. In fact, I believe they have no equal as honey-gatherers; and with our present mode of management, together with comb foundation in our sections, they are all I could desire as comb-builders. I again repeat what I said in the A B C, several years ago, that \$500 would not tempt me to exchange my present stock of home-bred Italians for those imported, or for any other bee which I am acquainted with.

#### QUALITY OF QUEENS.

Next comes quality of queens reared by natural swarming as compared with those reared "artificially" at it is termed. All, without doubt, know that I prefer queens reared under the swarming impulse; and about the only reason I can give for such a preference is, that such queens prove, on an average, to be of one-third more value to me than

do those not so reared, with the exception of such queens as are reared to supersede an old queen, if reared while the old queen is still in the hive. In both of these cases the bees are not *compelled* to rear a queen in haste for fear that they will not have brood of the right age to rear another for any length of time, as is the case when the queen is taken away, but, on the contrary, they take all the time needed, knowing that they still have a queen to fall back on should they fail from any cause in their first attempt. Now, when a colony swarms, as the Italians frequently do before queen-cells are started, I do not like queens reared in such a case any better than I do when the apiarist takes the queen away. It is the presence of the queen in the hive at the time the young queens are being reared that causes the bees to give the best of a cradle, care, and food, to the royal occupant. This cradle, care, and food, make all the difference in the world in the future usefulness of a queen, the same as does a mother's nursing, teaching, and love, to the child over that of a stranger who cares naught for it except that, in some way, it lives till it can help itself.

I could go on at length and tell of the food left in the cell after the queen hatched; of how all the requisites are present to rear good queens, etc.; but that would not help any. It is sufficient for me to know that, on an average, queens reared while the old queen is in the hive prove to live one-third longer and do one-third more work than do those not so reared. G. M. DOOLITTLE.

Borodino, N. Y., Aug. 31, 1886.

Friend D., I do not know whether it makes any difference whether we call our Italians hybrids or something else, so long as we all agree that they are. All things considered, the best bees to be found; but I do not quite see the force of your reasoning, that they can not be a pure race because the queens vary so greatly in color. We have plants and animals of all colors, unless we take pains by careful selection to *fix* the colors.—Now, in regard to cells made under the impulse of natural swarming, do not Italians, as a rule, or, at least, a greater part of the time, send out a swarm before they start queen-cells? I have, a good many times, tried to prove by experiment, that queens reared while the old queen was in the hive, were superior; but so far it has not seemed to turn out that way. My experiments, however, in that direction, have been somewhat limited.

#### HONEY NOT SUITABLE FOR COOKERY.

MRS. CHADDOCK'S IDEAS IN REGARD TO IT.

**W**E were not to thrash till next Saturday; but yesterday Mr. Chaddock came in and asked me if I could get ready for them to thrash to-day. I said, "No."

"Well," said he, "Mr. Ellison is here, and they have no other job; and if you *can* get ready I guess I will try to thrash to-morrow."

"But we have not a spoonful of sugar in the house," I demurred, "and thrashers always expect good things—cakes and puddings and pies."

But Mr. Chaddock kept on.

"Couldn't you start a new fashion," said he—"get up all the other good things that you can

think of and leave out the sweet things—you have plenty of honey, you know?"

Then a thought flashed all over me, "I'll do it! Bring on your thrashers, and I'll sweeten every thing with honey."

We live four miles from town; and in this jam-up hurrying, no man, woman, nor child could be spared to go after sugar; and if we had them at all for weeks, we must have them now. I had several Mason jars full of honey that was left on the plates after we had eaten the comb honey off; and with this honey I made grape pies—green-grape pies; put in a layer of grapes, and half a layer more; sprinkle in a small handful of flour, then four table-spoonfuls of strained honey; put on top crust, and bake; also Dutch pies. Put a handful of flour in the bottom crust, and even it around; lay thin slices of good ripe apple closely over the bottom; put in a lump of butter as large as a hickory-nut; three table-spoonfuls of honey; grate a little nutmeg on top, and fill up with *boiling* water; it has no top crust. This is the famous Dutch pie that the belles of Illinois bake to hand out to their beaux on Sunday night when they come home from buggy-riding, only they make it with sugar instead of honey. I made some blackberry pies too, and sweetened them with honey; and we made cakes, and cooked apple sauce. As Josiah Allen's wife says, "Every thing went off well"—virtually all eaten up slick and clean, a compliment to the cook. But I don't like to use honey for cooking-purposes. In the first place, it is *not* cheaper than sugar; and in the second place, it doesn't make things taste quite right; and in the third place it is smeary.

#### THRASHING-MACHINES AND THEIR IMPROVEMENT.

Thirty years ago or so I used to help my father thrash. He used a flail, and we children gathered up and carried out the straw after the grain was beaten out. We had a smooth mud-floored thrashing-floor between the hay end and the horse end of our barn, and there we toiled day after day. As I sit here writing I see the steam-thrasher at work. They began at eleven o'clock, and in one half-hour more they will have thrashed twenty acres of heavy oats. They can thrash 2000 bushels in a day as easily as any thing. The little black engine, puffing its black smoke all day long, does the work of twelve horses, and it eats only coal and water. I like to see a steam-thrasher at work. It just about comes up to my idea of business. I like to see four men on the rick when one used to be enough, and a whole string of men on the strawstack handing the straw to each other. I like to see three teams hurrying away with side-boards on, level full; I like to see the sooty engineer raking the fire and throwing in coal; I like to see the boys hurrying with the water for the thirsty men, and all the rush and roar of it. I think if I lived in Paris I should be a Communist; if in Chicago or St. Louis, I'd be an Anarchist and shoot policemen. As it is, I take a wild delight in having thrashers, harvesters, or any thing to break this everlasting monotony. They have finished thrashing now. It is seven o'clock; and since eleven this morning they have thrashed 1027 bushels of oats, machine measure. It will weigh out eleven or twelve hundred. They could have thrashed more, but they broke a rod or spring or something, and had to send a man four miles to a blacksmith to get it mended. That took about an hour and a half,

MAH A B. CHADDOCK.

Vermont, Illinois.

My good friend Mrs. C., the reason why honey will not answer as well for sweetening pies, and other things of a like nature, is because there is too much fruit-juice already; and while sugar would take up this fruit-juice, honey simply becomes diluted by being added to it. Honey is not good to put on apple-pudding, for the same reason. It tastes watery, and somewhat insipid, while even *brown* sugar, with a little butter, is delicious. You can remedy the matter somewhat, by using candied honey from which the liquid portion has been thoroughly drained. If honey is not cheaper than sugar now, it bids fair to be very soon.—I agree with you in liking to see business going on; but I do not believe I should ever want to see the monotony of life broken by becoming an *Anarchist*.—At our recent State Fair I saw arrangements that do away with the hard labor of the *stackers*, to a great extent, and I presume that a few years more will show far *greater* improvements in this branch of farm industry.

#### AN A B C'S OBSERVATIONS.

WHAT KIND OF A BRUSH SHALL WE USE IN GETTING BEES OF THE COMBS?

**N**OTICING in a late GLEANINGS an article from "Joseph," something about brushing vs. shaking bees from the comb, I feel like adding my experience, which may be useful to some. I think "Joseph" must work with black bees only; for while I have found them easily shaken off, I find it very difficult to shake Italians from the combs; besides, sometimes I wish to get bees from combs containing more or less unsealed honey, and the honey shakes out. I have used the Davis and other similar brushes, and been provoked by the bees attacking the brush, struggling frantically into the bristles, and calling for help until the thing was full of angry bees, and the air too, for that matter, for anger is contagious, especially in a bee-hive. I felt like throwing the thing away, and did sometimes, when the bees mistook my hand for the brush.

One day, after I got a comb in hand I found I had left the brush at the house; so I pulled some green timothy straws and used them. I noticed at once that the bees did not return to fight. Afterward I made brushes by cutting the straw about 14 in. long, about 20 of them, binding about 4 inches from one end for a hand-hold. I laid them lengthwise on the comb, brushing the bees quite as readily as with any brush; and after a month's use in the apiary I did not notice a single instance where the bees seemed angered at the brush. I suppose, having been accustomed to being brushed from flowers by the waving blades of grass, they took it as a matter of course. Now, I suggest that brushes be made with long splints of buckeye or rattan, stained green, to resemble grass-blades, and see how the bees seem disposed toward them. The grass itself is not durable enough to be satisfactory. Now, Mr. Editor, I think I see you scratching down at the end of this, that old bee-keepers knew all about this long ago, and had discarded it, or that you had decided that bees were color-blind, and that color could make no difference.

DO BEES DISTINGUISH COLORS?

Speaking of color, bees, as well as every thing



else, seem to accept red as the gage of battle. One day, having torn the wristband of my under-shirt (red flannel) so that a small portion was exposed to view, the bees attacked it vigorously, and to the exclusion of every place else where they might have stung.

#### COMB-BUCKET, HOW TO IMPROVE.

I want you, friend Root, to improve your comb-bucket in two respects. I want you to put legs to it, to extend down and out two or three inches, so that it may be set down on the grass without tipping over of its own weight; and instead of two wooden handles, make one a kind of sheet hook, to hook over the other, making only one in the hand. It is very difficult to hold the two when carrying the bucket full of combs.

BEE-KEEPER.

Charleston, Ill.

No, friend Bee-Keeper, I am not going to say that grass was discarded long ago, and I very much doubt if a brush can be invented that will work as well as a fresh bunch of grass, or a bunch of clover.—Legs on a comb-bucket would cost money, and would also be unwieldy to ship. Have a lawn-mower, and keep the grass shaved off close.

#### FUN WITH THE BEES.

##### HOW MY BEES HAVE GONE WILD—THE OTHER SIDE OF BEE-KEEPING.

TELL you, I have had fun with the bees this year, or else the bees have had fun with me. The "fun" may be said to have commenced May 18th, when a swarm issued about three weeks earlier than ever before. At that time the meads were growing white with clover, and I went to clapping on surplus arrangements, and dividing. But owing to an accident which had crippled me for several weeks in the spring, and the fact that the season had set in so much earlier than usual, I was not prepared for it. I had a plan I had resolved to try. I wanted, and still want, as it happens, to control the wild, everlasting swarming instincts of my bees. I did with a dozen or fifteen according to my notion, but I could not get around fast enough. I had to quit dividing, prepare the section cases, and put them on. I could not do that in a day. In the mean time the bees were sending off their skirmishing parties, and ere long the great swarming armies were upon me. Among them were some from those I had swarmed myself. I grinned a "just as I expected," and let them swarm. It was fun to see the bees go to work so heavily in the boxes, and how I laughed to take off some fine white sections about the day in the year that I had formerly seen bees first go lightly to work in them! About the same time I laughingly shouted, "Well, they are enterprising," when I beheld my 18th-of-May queen lead off a second swarm, one day earlier than I had ever had a swarm before. The season was now upon me. You all know what that means. I had little time to swarm artificially. I could only put together frames and sections, take off honey, hive swarms, and do the making and mending I found necessary. Soon one after another of those that had swarmed and been hived on the old stand followed the example of the first, and swarmed again; also several of those I had divided. Thus far all these unwelcome swarms,

I found had been hived partly on frames wholly or partly filled with old comb. I smilingly decided that I would know how to fix them next year!

"Bees," said I, "when they swarm, want to set up housekeeping anew." I had long thought it, and now I was sure of it. Yes, I laughed in joy at the discovery. But the laugh turned against me, as you will soon find. Just about now so many things happened that I can not keep up in the telling. I had started into the season with 57 stands of bees and a queenless one, and about 35 empty hives available. I was going to keep down swarming, and bend all our resources and powers to the production of honey, that I was as sure of as the world, etc. Thus far I had controlled it in such a manner that, at the rate they were going, three days bade fair to utterly exhaust my stock of hives. No frame hives to be obtained, except two L. hives, about as much like mine as black is like green; no lumber to make any box hives, which I did not want any way; no time to make them or get anybody else to make them; no time, in fact, to do any thing but what was before me. Every one else was as busy as the bees were, and, as crowded as I was, what should I do? Well, it was part of my plan to set two old colonies side by side after swarming, and, after the queens had hatched, to unite them. I put the extra frames in the upper story, and ran for extracted honey. The frames of some colony that recently swarmed I would distribute among the colonies thus formed. These young queens, contrary to all precedent and all reason, went to swarming pretty soon after they got to laying. Also some weak colonies that I had utilized some of these old colonies to strengthen, swarmed as soon as they felt big enough. Also, if I chanced to put a frame containing unsealed larvae into a hive with a cell nearly ready to hatch, they would start a new set of cells, and swarm; then again two or three weeks after I thought it was all over, here would come another puny swarm. All these things happened a number of times. Of course, these proceedings filled up my hives all the faster.

Every day for nearly two weeks, except a couple of very rainy ones (and I tell you I smiled broadly at the chance they gave me to get a little ahead), I would run down to about two hives to none available. So about six o'clock p. m. I would start to empty some hives for—to-morrow. I usually hived my swarms on six frames. Now I would take off supers, remove dummies, and poke a frame any where I could find to poke it. Colonies of to-day's swarming that I had set off from the old stand I would tear to pieces, or perhaps carry them mostly to the upper story of some hive that ought not to swarm. Several hives now held 12 to 20 frames. I had to put my swarms on empty frames. Accordingly I had to nail a lot of new ones that I had not expected to want, and fix them in them. No time for *ennui*. I was kept on a hop, skip, and jump all the time. But, not content with contrariness, those crazy bugs must add to it capriciousness. I hived a big swarm one Sunday. The next day it arose and left. The new disease caught and ran like wild-fire. I would hive swarm number 40 as near as they would hive. Perhaps they would nearly all go in. If they did they would crawl out and cluster in front, on top and all around, more or less. All the way from half an hour to 24 hours they would swarm out and settle, to be hived again or go off, or simply adjourn to the front part of another

hive—sometimes all three or less. It did beat all how they would cluster in front of another hive, and then, like the dog in the manger, neither do any thing themselves nor let anybody else do. "Well, that is funny," was my exasperated exclamation, a dozen or so times during the progress of these proceedings. Now I found out that many of my absconders were hived on empty frames. Indeed, I had ceased to put any old comb into the hives, before the swarming and absconding fever had reached its height. My bubble theory had burst. Several of my baby-swarms I put back, and half of them stayed. Of course, two or more swarms often went together. I would hive them together—it was the best I could do. Several times such a colony became queenless. I think this was because one queen was a layer and the other a virgin, and the bees of each swarm balled the queen of the other.

One of the hottest days—hot in more ways than one—a swarm settled high up and far out on a hickory limb out in the pasture. Soon another clustered on a young apple-tree. I was preparing to hive the one I could get at easiest, when another started to settle with it. I wrapped my sheet around it and held it there awhile, sweating at the same time. But I suppose the queen got ahead of me, for those bees would not stop any where else. I had no time to waste, so I gave it up. After they had settled, I shook them down on to the sheet. In the meantime my high-minded swarm had adjourned to the end of a lofty limb of another hickory in the other pasture on the opposite side of the apiary (some time afterward I saw another swarm make a similar change of lodgings). I was lugging my step-ladder, hive, sheet, and long-handled pruning-knife to their settlement, when I beheld them all at once move down to the front of another hive, the occupants of which did not know what to do with themselves. I thought that was as funny doings as bees could do. But the two swarms down by the apple-sprout did funnier still. When I came back to them they had blackened that big ten-frame two story hive. I did not move them—it was not worth while, even if I could.

The next morning I walked down the path just in time to see a swarm rise and start off. But in a minute another swarm issued from the hive, and another swarm sailed off about twenty paces behind the first, and the two moved like a funeral procession down the fence-row. As I stood and watched this proceeding I thought, "Surely not many an old apiarist has seen such a show as that." It was the funniest caper I had beheld them cut. I had to run in and tell mother.

Do folks ask, "Why did you not hunt out the queen, divide the swarm, clip her wings, cut out cells? or do this or that or the other, or something else?" Now, I do not want to take six sheets, in addition to what I have written, to tell why. But imagine, if you will, a little, nervous, dyspeptic fellow, with back and limbs perpetually getting the aches, muscles as soft as those of a sweet-sixteen society girl, joints so stiff and sore that, after sitting at the dinner-table twenty minutes when he meant to take only ten, he would get up and start off like a buck-kneed string-halt colt; supers getting full, weeds and sour docks growing that he did want so much to get shut off; letters lying unanswered, etc., and it may be not as much *sense* as Heddon or Root. I tell you, it was easier to *say* than do. You see, a

weakling can not do as well, even at bee-keeping, as a stout healthy man. GEO. F. ROBBINS, 57—93.

Mechanicsburg, Ill., Aug. 20, 1886.

Why, friend R., you did have "business" in real earnest, did you not? What queer opinions we often get from reading the letters of our correspondents! Somehow I had got the idea that you were a great big man, like Doolittle and some of the others. One of *my* besetting sins is to make great preparations, in the way of business, for booms that never come to pass; but once in a while I happen to hit it, and then you do not know how I enjoy having plenty of every thing ready to take care of the business when it does come. I, too, am small, and not very strong, and quite often nervous and dyspeptic; but the stout, healthy men do not always move things very much further or very much faster than I do; so take heart, friend R.; the victory is not always to the strong.—By the way, you did not tell us how much money you made, after all your trials and tribulations had been passed through. I think you have learned something by experience, and next time you will probably find yourself a little cooler, and a little more master of the situation.

#### FOUL BROOD.

DOES IT EVER ORIGINATE FROM OVERHEATING THE BROOD?

WHEN a bee-keeper finds foul brood among his bees, about the first thing he thinks of is, How did it come there? About the first of June, 1874, I bought of N. N. Betsinger, then at Marcellus Falls, four swarms of bees. The frames of brood and bees were put into boxes, which were prepared for that purpose by making a small hole in each end, with wire screen over them. The day we went after them we had to wear our overcoats, it was so cold riding. We stayed over night. Next morning we put the bees in the boxes early in the morning, and started for home, about 30 miles. The sun came up bright and clear, and proved as much too warm for comfort as the day before had been too cool. With our calls and journey, the bees were shut in the boxes all day, and let out after sun down; with the warm weather outside, and the closeness of the boxes, a few of the combs (which were *old* ones, with very little honey in them) broke from the frames. In about 30 days I found foul brood in all of the four swarms. Later on I saw Mr. Betsinger. He said the bees were all right when we left his place; I also saw the bees and brood when Mr. Betsinger put them in the boxes, and saw nothing wrong about them then. Evidently the foul brood was caused by the great heat in the boxes, together with the neglect of the bees, through the day, to care for the unsealed brood.

Two of the young queens that were in other swarms, and mated that summer in my apiary, had this peculiarity about them. Some of the larvæ, when about ready for the bees to seal over, died in the cells; also some that *were* sealed over, and were formed bees with legs on them, died; but, unlike foul brood, this dead brood was only where the two queens were, and was not contagious.



I removed those two queens, and put others in their places, and the whole cause was removed.

As a proof that it was the heat in the boxes that caused the foul brood in the first instance, I will give my experience again, as late as 1885.

A very warm day, my bees were swarming at a tremendous rate. I had three swarms then in the air, when another swarm started to come out. I wished them to wait a few minutes, that I might care for the first three, and I put a board partly covered with wire screen over a hole as large as a man's hand with fingers and thumb straightened out, over the portico, fastening the bees in. While caring for the swarms that were out, I was detained longer than I expected; and when I returned to the hive where I had shut the bees in, I found the honey running out at the bottom on to the ground. I removed the screen-board, took the hive into the shade, opened the whole hive to the air, but it was too late; part of the bees were then dead; the others, though they could move a little, died very soon.

Within the hour I put bees (no queen) on to these frames of brood, as a test whether this state of things would produce foul brood or not, within five days *all the unsealed* and part of the sealed brood was a putrid mass, which the bees could never remove.

Now, from my past experience I think it safe to say that foul brood often originates in the apiary where it is discovered, by the careless operator, who leaves the brood from hives exposed to the scorching rays of the sun, thereby scalding the larvæ in such numbers that the bees can not remove them in time to escape the dreaded disease, foul brood, by the brood becoming a putrid mass. After a time the dead larvæ dry down, and the bees remove a part of it, then the queen lays in the same cells, and surely the larvæ will die and become a putrid mass, the same as the first. Usually, before the operator discovers that he has foul brood, he has changed combs, or in some other way has got into other hives; then the question, *How did I get foul brood?* H. D. MASON.

Fabius, N. Y., Aug. 20, 1886.

Friend M., your suggestions would be good had it not been well proven that foul brood is a plant, and can no more start spontaneously—i. e., without seed—than can a hill of corn. Dead brood may start putrefaction, and this may present much the appearance of foul brood, but the seeds of foul brood must be present or it will never be foul brood at all. I scanned your communication with much interest to see if you did not, somewhere, mention whether or not friend Betsinger has recently had foul brood in his apiary.

#### CELLAR WINTERING AND SUB-EARTH VENTILATOR-PIPES.

DISCUSSED BY MR. HUTCHINSON AND DR. MILLER.

**F**RIEND MILLER:—I was very much interested in your articles on cellar wintering.

1. Let me ask you if two or more small sizes of tile laid in the same trench would not be better than one large tile, simply for this reason: There would be greater opportunity for the influence of the earth's warmth upon the air. The distance around a four-inch tile, where it comes in

contact with the earth, is about one foot, while its carrying capacity is represented by 163 gallons per minute. An eight-inch tile has a surface of about twenty-four inches, only twice that of a four-inch, yet its carrying capacity is represented by 923 gallons per minute, or nearly six times as great. Do you see? Of course, the expense would be greater in using several small tile.

2. In your experiment in stopping up your four-inch tile, how far in from the inner mouth of the tile did you put your thermometer, far enough so that the warmth from the cellar would not affect it?

3. Have you ever noticed how many degrees the air is warmed in passing through your tile, or does it differ?

4. How did you learn that 100 ft. was long enough for your four-inch tile?

5. Your stoves are not in the same apartments as are the bees, are they?

6. Do you use them to cause ventilation or to warm the cellar, or both?

7. Why isn't your cellar warm enough without them?

8. At what temperature do you keep it?

I presume I have asked enough for one time.

Fraternally yours, W. Z. HUTCHINSON,  
Rogersville, Mich.

Dr. Miller replies to the above:

1. Two or more tile of a given capacity will warm the air more than a single tile of the same capacity, as explained in the question, provided that length of pipe has not been reached where the temperature of the air in each case has become that of the surrounding earth. In this case, of course, the smaller tile would have no advantage.

I had at one time decided to lay two tiles in the same trench, to have the advantage of raising the air to a higher temperature; but upon further thought and experiment I concluded I could more satisfactorily and cheaply accomplish the same thing another way. An eight-inch tile will cost less than two four-inch tiles; and to make it bring the air to the same temperature, all that is necessary is to partly close the aperture where it enters the cellar, so as to make the air flow in at the same rate of speed at which it flows in the smaller tiles. In this case you would have the advantage of being able at any time, if you so desired, to open up the pipe to its full capacity and flush out all the air of the cellar. I think now of putting a ten-inch tile in the drain for my shop cellar; for, no matter how large, it can at any time be closed down to the capacity of a small tile; but if a smaller tile is laid it can not be enlarged.

2. The thermometer was thrust into the pipe as far as possible without putting it beyond reach to draw it out again. I hardly think the warmth of the cellar would have much effect upon it, as the contents of the whole tube would freely mix.

3. The number of degrees the air is warmed in passing through the tile depends mainly on the outside temperature. One day the air may be warmed five degrees in passing through, and the next day twenty degrees. The air enters the cellar, say at 35°; if the outer air is 35°, the air is warmed 5°. If the outer air the next day is 18° it must, of course, be warmed 20° to enter at 38°. In other words, the air enters the cellar at about the same temperature from day to day, no matter what the weather, and there is no perceptible change with

the change of weather, only as it changes very slowly in the course of the winter, and that through but a small number of degrees, growing a little colder as the winter advances.

4. I put the thermometer in the tube and then closed the tube. After remaining closed several hours, the thermometer showed the same temperature, substantially, as when entirely open. Of course, a longer tube could raise the air no higher than it would be when standing still in the pipe; and as 100 ft. raised it to that temperature, a longer tube could raise it no higher.

5. My stoves are in the same apartment as the bees, the nearest hives being about four feet from the stoves. When I used wood-stoves I put a board covered with zinc between the stove and the hives. Since using coal-stoves I use no such precaution, and I think the colonies nearest the stoves winter as well as others.

6. I just used fires occasionally to warm the cellar when the bees began to be uneasy in a cold spell, but concluded afterward that they did more good by increasing ventilation. I am now uncertain whether the heating or ventilating is more important, but believe both essential to best results.

7. Because, without stoves, the best cellars in this locality hardly keep above the freezing-point in the coldest spells. Possibly, some time I may succeed in warming by a sub-earth tube.

8. I try to keep it from 43° to 45°.

I shall be thankful for the severest criticism from friend Hutchinson, or some of our sharp-eyed Canadian friends; in fact, from any one; for in the matter of warming and ventilating I am as yet a novice.

C. C. MILLER.

Marengo, Ill., Sept., 1886.

## NOTES FROM THE BANNER APIARY.

NO. 82.

### THE LAST NUMBER OF GLEANINGS.

IT seems to me that it was an especially good number. I should like to notice a few points.

#### THE WAX QUESTION, AGAIN.

Is not the only way in which this question can be settled—i. e., so as to be of any practical benefit to bee-keepers—to do as I have been doing the past four years; viz., hive part of the swarms on fdn., and part on empty frames? What do we care how many pounds of honey are consumed in the production of a pound of wax, if we do know that it is profitable to allow the bees to build their combs at certain times and in certain places, and at others it is better to furnish them fdn.? I feel that we have been using fdn. too indiscriminately; that to know *exactly* when and where, to me is a great question. I know that for me to use it in the brood-chamber when hiving swarms, is to lose money, and I see by this last issue of GLEANINGS that others are arriving at the same conclusion.

#### IMPLEMENTS AND LABOR.

It is a pleasure to see an article once more in GLEANINGS, signed "J. M. Shuck." His articles are always timely, valuable, and well written. When he says, "The time required to manipulate the invertible hive for the production of honey is not one-fourth the time required for a non-invertible hive. *There is the gage, come who may,*" he very tersely covers *nearly* the whole question.

This question of implements and labor is an important one, and I feel that Bro. Doolittle does not take the correct view of it. The quotation that he gives from somebody's letter; viz., "The use of my hives and surplus-cases will give you more honey than you now produce, with one-half the labor," ought not to be construed to mean that the use of certain hives would enable the bees to gather any more honey, any more than the use of the mowing-machine, horse rake and fork, would enable us to secure more *hay* per acre; but the use of these improved implements enables us to secure the same results with *less labor*.

#### BLACK BEES; ARE THEY EQUAL TO OR BETTER THAN ITALIANS FOR COMB HONEY?

The point that you make, Mr. Editor, in your foot-note to Mr. Coleman's article, in regard to his having *all* black bees, hence could not make a just comparison, is a reasonable one. I think, too, that the majority of bee-keepers favor the Italians; but for the production of *comb honey* I doubt if there is a better bee than the black bee; *possibly* a cross between them and the Italian is better; but were I to choose a pure variety I would unhesitatingly choose the blacks. When handling combs, looking for queens, and the like, Italians are more pleasant to handle; but in raising comb honey this is something we seldom have to do. Ever since I began the production of comb honey I have had from five to twenty colonies of blacks (controlling, of course, the production of drones), and these black colonies have *stored as much honey upon an average as have the Italians*, while the honey is of finer appearance. This very propensity of the blacks, to run off the combs when being handled, is really valuable when we manage bees by handling *hives* instead of combs, as the hive is more easily cleared of bees, just the same as I can clear a case of sections from black bees twice as quickly as I can when the bees are Italians. I do think the blacks are more inclined to rob and to suffer from the attacks of the moth; but as I have yet to lose my first dollar from *either* source, I consider these minor points.

W. Z. HUTCHINSON.

Rogersville, Genesee Co., Mich., Sept., 1886.

## FOUL BROOD.

"ALMOST SCARED."

FRIEND ROOT:—I can not but feel sorry for you when I think of "the dire calamity" which has befallen you; but, are you *sure* you have *foul brood*? I consider myself an old veteran in the foul-brood business, and you just look on page 388 of the *Canadian Bee Journal*, and see how near I came to being "almost scared" about foul brood here in our apiary, where every thing is nice and new, and every precaution had been taken to not have the disease in our new apiary. If you have the "real stuff," then you are doing right to burn up the combs. But, be it whatever it may, turn on the steam and give it a warming-up, anyhow.

A. W. OSBURN.

Havana, Cuba, W. I., Aug. 23, 1886.

Yes, friend O., we feel sure we have the "real stuff." In spite of all we can do, it continues to exist in our apiary. See Our Own Apiary, this issue.



## WHAT TO DO, AND HOW TO BE HAPPY WHILE DOING IT.

*Continued from Aug. 15.*

### CHAPTER XXIII.

We remember . . . the cucumbers, and the melons, and the leeks, and the onions, and the garlic, which we did eat in Egypt freely.—NUM. 11:5.

Continuing the conversation which was interrupted by our last chapter, I remarked:

"Then, my friend, this wonderful corn has been brought up to its present perfection by your own efforts, has it?"

"Well, somewhat; but it was a very good corn when I first began growing it."

"What do you call it?"

"It is the Crosby Early sugar corn."

We talked about a good many other things; and as I bade him good-day I thanked him for the important facts he had furnished me. He in turn thanked me for the pleasant chat I had given him. I started off at a rapid rate, for my time in Arlington was worth to me—how much? Well, something like five or ten dollars an hour; that is, I had paid out an amount of cash to come so far that would make every hour of my stay cost me something like five or ten dollars, and therefore even the minutes were precious. I had not gone far, however, before I thought I heard somebody behind me. It was our old friend. As he came up he remarked, "If you will write your name and address on a paper I will send you some of the seed of that corn by mail when it gets ripe."

"Why, my good friend, I am much obliged to *you*; and if you will give me your name also, I will with pleasure send you our bee-journal for a year, that I was talking to you about."

He said he was getting to be so old he could not read very much; but he said he would be very glad to look at it, especially since I told him it contained more or less pictures every month. When I came to write his name in my memorandum-book, what do you think it was? Why, this: *Josiah Crosby*. I looked up in astonishment as I put out my hand again to him.

"Why, my friend, is it true that I have been talking this morning with the originator of the Crosby Early sugar corn?" He bowed and smiled.

Now, dear friends, I warn you, before you send to friend Crosby for some of his sweet corn to plant, that unless you have the Arlington soil, or soil as they manure it, your corn will turn out like that which we have already, pretty much.

I noticed on friend Crosby's place they

were pulling up cabbage-stumps, and drawing them off in carts to a compost heap. I noticed afterward, also, that, when composted with manure, they gave a decidedly rich smell. I asked Mr. Crosby if they never fed them to stock; but he said there was not stock enough to consume the hundredth part of them. They are composted, and worked back into the ground again. I asked him if he had ever been able to make any estimate of their probable value for compost. He said he thought a ton of cabbage-stumps was worth pretty nearly if not quite as much as a ton of night-soil, which is largely used in the gardens of Arlington. Their plan of using night-soil is to make heaps of stable manure in the fields, and then hollow out the center so as to make a cavity. The night-soil is now drawn in carts and dumped into this cavity. The manure is now thrown over it, and the whole heap is forked over from time to time until it becomes a dark homogeneous mass, ready to be spread and plowed under.

Dandelions are a favorite crop in Arlington. Sometimes we found half an acre of them, and they told me that they found them to be a very profitable crop. In early spring the dandelions bring \$6.00 a barrel, for early greens. It takes two years to get a crop; that is, the seed is sown in the spring, and the plants are cut for market the next spring. These cultivated dandelions are very much larger than our wild ones growing in the fields. The plant is cut for market just before it begins to blossom.

#### RAISING CUCUMBERS IN GREENHOUSES, FOR THE BOSTON MARKET.

Mr. W. W. Rawson is the great cucumber-man of Arlington. He has seven greenhouses devoted exclusively to raising cucumbers. These seven greenhouses contain over 1000 hills. The vines are trained on a trellis running about a foot below the sashes. My attendant told me they picked one day 2000 cucumbers which were sold in the winter at 30 cts. each, or \$600 for one day's picking. They warm the houses by steam. It has generally been thought a difficult matter to raise cucumbers under glass; but my attendant said there was not any trouble at all. I suppose there is no trouble, because

he has learned just how to do it, and so it becomes as simple as many other things which we do daily, and think nothing about it whatever.

"My friend, how about fertilizing the blossoms? Where you raise cucumbers or melons under glass, you are obliged to carry the pollen from one flower to another, are you not?"

"Why, bless your heart, Mr. Root, *we* don't carry the pollen — the *bees* do that."

I was all attention all at once, you may be sure; but he seemed to take it so much as a matter of course that I began wondering whether he really knew what he was saying, so I ventured — but while I spoke, my mind ran vividly over my experiments with bees in a greenhouse years ago, and this is what I said:

"But do you keep *bees* all winter long in these greenhouses?"

"Why, yes; to be sure, we do."

"But where are they now? I don't see any."

"Oh! we take them outdoors as soon as it is safe to have all the doors and windows open."

Perhaps he thought it took a good deal to satisfy my curiosity, so I ventured to ask if I might see the bees where they were now. Sure enough, there were seven hives of bees. They were in old-fashioned tall box hives, and set on a bench side by side. They did not get any honey from them; in fact, he said they did not pay any attention to that part. All *they* keep them for is to make the *cucumbers* bear, and I tell you they *do* bear, judging from the specimens I saw hanging on the trellis, even as late as the 28th of July. I walked up to the entrance, scanned the bees closely to see if there was any Italian blood; but they were just common black bees — nothing more. He said they bought them for Italians, and I promised to send him our bee-journal, to post him on bees in return for the way he had posted me on cucumbers.

"But, my friend, do the bees not die sometimes? Don't they fly up against the glass, and worry themselves to death, and then fall on the ground?"

"Oh! they do to some extent when we first bring them into the house; and sometimes a colony does not seem to work well on the cucumber-blossoms. In that case we try another. The price of a colony of bees is not much compared with the product of our greenhouses. As a general thing, after the little fellows get to work on the blossoms

they find their way back to the hive as well as if they were out of doors. And what a humming they do make, some of the coldest winter days, when the sun comes down so as to brighten up every thing!"

I asked him if the cucumbers did not require a very high temperature. He said they did better with a temperature between 70 and 80 degrees; but he did not think it was a matter of so very much importance after all. Of course, they grew faster when the temperature was just right.

While my friend was talking I could not help smiling at the recollection of an incident related by Mr. L. C. Root at our little bee-convention at Versailles, N. Y. He said, during his speech, that a lady living near him complained about his keeping so many bees; but when asked to tell just where they inconvenienced her, her principal grievance was that she was unable to raise a single *cucumber* in her garden since he had been keeping so many bees in the neighborhood. Just think of it, friends! I do not mean to be hard on the poor lady; but it is well worth our while to stop a minute and consider how much foolish superstition is passing current among people, in place of real science. As I stood in front of that row of seven box hives of black bees, I stood for a moment in silent wonder, to think how two such great industries were moving along in our nation, and yet the busy brains of the one industry knew hardly any thing about the busy brains of the other. My friend by my side knew all about cucumbers, but he did not know a thing about bees. I am not sure he knew there was such a thing as a movable-comb hive in existence, and yet he was a *bee-keeper*. He could not raise cucumbers without being a bee-keeper. I knew all about bees, and could have pulled all his old box hives to pieces—could have shown him the queen, and talked for *days* to him without having exhausted the subject of bee culture, and yet I knew comparatively nothing in regard to *his* industry.

Now, another point comes in right here: On one of the benches I saw about a dozen of the most beautiful cucumbers, it seems to me, that were ever produced since the world began. May be the ancient Egyptians used to have some that would compare with this lot, but I hardly think they did. They were not only larger than any thing I ever saw before, but they were beautifully symmetrical in shape, and of a pearly whiteness that made them wonderfully attractive to the eye.



My guide seemed inclined to pass along; but I called to him to hold on a bit.

"My friend, what kind of cucumbers are those? and how in the world does it come that such a beautiful lot of them should be left here in this out-of-the-way place?"

"Why, Mr. Root, those extra-fine cucumbers are saved for the seeds, and these seeds are to be planted in the greenhouses next year. They are the most perfect and finest specimens we can select from our whole crop."

"But will you sell me some seed from these? I would give their weight in gold, almost, for a few of them to get a start of that variety."

"Why, the variety is the 'White Spine' which we advertise; but I don't know whether the boss would let you have any seeds from *those* specimens or not. You will have to write to him about it."

I did write to him, you may be sure, just as soon as I got home, and here is his reply:

Mr. A. I. Root:—Your esteemed favor is at hand. Your order will be mailed to-day, except the Rawson's White Spine cucumber. This stock we at present have not got, but later on will send you some seed taken from Mr. Rawson's own stock, the same stock as "those cucumbers" were from. Mr. R. regrets that he was out West when you were at his place, as he might have helped to show you round.

W. W. RAWSON & Co.

Boston, Mass., Aug. 5, 1886.

Now, then, no doubt all of our readers are just like myself, and want a few of those choice seeds. I suppose they are really stock seeds, such as friend Green alluded to on page 607 of GLEANINGS; and you know stock seed is not often for sale. I would gladly divide with you, but the few seeds I am to get would not begin to go around among so many friends. You can buy the seed of the Arlington "White Spine" cucumber by sending to Mr. W. W. Rawson, Arlington, Mass. But the great point for us is right here: Just think of the wonderful importance of having the very best seed that can be procured, when the crop of cucumbers is to amount to several thousand dollars! Those who have sold cucumbers in the market very well know how much more they can get for a nice, handsome-shaped cucumber, compared with a crooked, ungainly one; and, without question, choice

seeds from the finest specimens will be more apt to give us a handsome crop of cucumbers than seed collected from refuse, crooked ones. And what is true of cucumbers is true of every thing else. It is of as much importance to please the eye of customers as to please the palate; and God has placed it within our reach to please both in a way we perhaps little know of now. Now, then, in saving your seeds for next year, or next summer's planting, remember, "Whatever a man soweth, that shall he also reap." I will try to save a lot of seed from the stock seed I am to have, and then I will gladly furnish you all, if you prefer to buy of me.

Some of the friends have written to me, making inquiries in regard to the culture of cucumbers under glass, but I suspect it will be almost impossible to lay down, in books, rules that will enable you to succeed without a good deal of "cutting and trying," as it were. Try one or two hills at first, in a small greenhouse; and when you succeed with a few, try it on a larger scale. But before you go into it very much, be sure you have a market for them, after you get them raised. We purchased some cucumbers early in April, and tried them on our wagon. But nobody had been used to seeing cucumbers at that season of the year, and they treated them about as they did our lettuce in January. We tried at first to get 10 cts. apiece for them; then we tried to close them out at 5 cts., and finally at 3 cts. But it was not the time of year for cucumbers in Medina, and folks would not pay as much for them then as they afterward paid in the latter part of June. In fact, just a little before the usual time for raising cucumbers in Medina, we got 5 cts. apiece for a dozen or more every day, and could not supply the demand. So you see you will have to work up a market at the same time you learn how to raise cucumbers. May be you will wonder why I chose this singular text. Well, it seemed to me a little funny that the ancient Egyptians used to relish garden vegetables just as we do—cucumbers, melons, leeks, onions, and garlic. Somehow my heart warms toward them in reading this little verse, for it brings me nearer to them. They were human, just as we are, with human wants and longings.

## CHAPTER XXIV.

Seest thou a man diligent in his business? he shall stand before kings; he shall not stand before mean men.—PROV. 22:29.

On the opposite page you will find a sketch of friend Rawson's ten acres under glass. When I first came on the grounds I turned up by the building in the foreground which you see surmounted by a windmill. I passed along by the alley on the left-hand side of the picture until I found a boy hoeing lettuce. I inquired for Mr. Rawson, and the boy told me Mr. R. was absent on a vacation. But he further remarked, that the best man to show me around would be the foreman of the greenhouses, whom I would find at work in the building mentioned. I have forgotten the young man's name, but he was very obliging and communicative. He went all over the grounds with me you see in the picture. The four large greenhouses in the foreground are those used for raising cucumbers. The three long ones on the left-hand side of the picture have movable sash, and these sash are taken clear off in the summer time. This latter plan of greenhouses has some very great advantages, especially the one permitting the sash to be removed, so we can reap the benefit of summer showers. These greenhouses are all warmed by steam, as I have before remarked, and my attendant informed me they had no trouble whatever in using steam in place of hot water. You can run your pipes up and down anywhere you wish, providing you remember to put a drip-pipe wherever there is a low point or depression in the steam-pipes. This drip-pipe is to have a valve, which is kept open just enough to let the condensed water get out of the way. The back part of the grounds is covered with hot-beds and cold frames. During severe weather they use large mats made of very tall rye straw. In fact, they raise a patch of rye every year in this wonderfully rich ground, in order to get straws six or more feet in length for making mats. The mats are woven by the watchman in the night time. When these mats are removed from the glass, as they always are when the sun shines, they must be placed somewhere. Now, even a simple matter like this is sometimes quite a problem. If you lay them on the ground they will get wet, and rot; if you lean them against the fence the wind will blow them down, and the most convenient way Mr. Rawson finds to be a tight board fence set on a slant. You will notice such fences at

intervals among the hot-beds and cold frames. These fences also serve as wind-breaks.

At the left of the picture you will notice a six-sided inclosure, with one side left open. This is for composting manure. It keeps the manure from getting scattered about in the dirt, and is easy of access from the open side. My attendant, though a young man, has entire charge of the heating arrangements, and he told me that, instead of employing expensive city plumbers, they cut their own pipes and put in their heating arrangements, according to their needs and requirements.

The building surmounted by the windmill contains the steam-engine used in pumping water when the wind does not blow. They always use wind in preference to steam when the wind blows. I believe that the boiler for heating the greenhouses is also in this building.

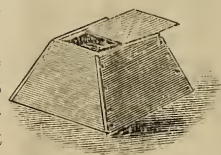
When I spoke of looking over the hundred-acre farm which also belongs to Mr. Rawson, my guide very obligingly asked me to take a seat in one of the market-wagons that was standing near the building, right where you see a wagon in the picture. The horse that drew the wagon was so well accustomed to his business that he took us wherever we wanted to go, almost without being told. I presume I asked more questions than some of the newly fledged scholars in A B C of bee culture.

I was particularly taken up with a field of Boston marrow squashes. The vines were so large for the time of year, and so exceedingly thrifty, I burst into exclamations of surprise.

"Why, my friend, were these not raised in a greenhouse, and planted out here?"

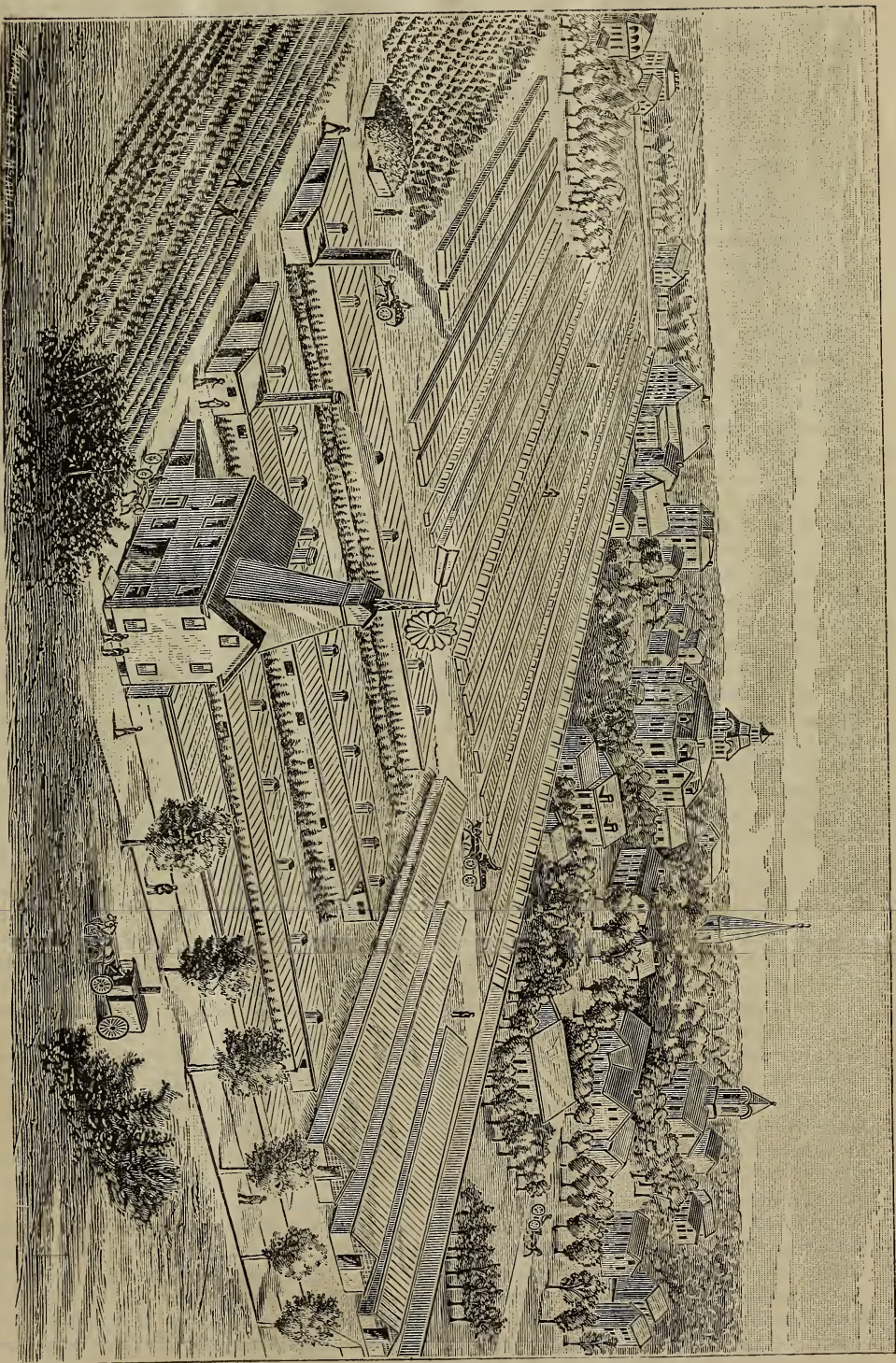
"No, sir; the seeds were planted, and the vines grew right where you see them. Aren't they handsome?"

I admitted that they were handsome, but I didn't feel quite satisfied with his answer. Why, some of the squashes were almost ready to send to market, and it was not even the first of August yet. Before we got around, however, my greedy eyes caught



RAWSON'S BOX FOR STARTING SQUASHES, ETC.





W. W. RAWSON'S CUCUMBER GREENHOUSES AND HOT-BEDS, ARLINGTON, MASS.



sight of a heap of boxes like the one shown on the preceding page.

As he was driving past the heap of boxes, I asked him to hold on a bit.

"Will you please tell me what those boxes with sloping sides are for?"

"Why, that is a secret; but as you have got hold of it, I suppose I shall have to admit that they are what we use over those squashes you saw. You seemed surprised to see them so much in advance of the season. Well, those boxes are the things that did it."

These boxes are made of half-inch lumber, and of such size that a pane of glass 8x10 slides easily in grooves, as shown in the cut. The squash-ground is prepared in the best manner, the seeds planted, then these boxes are placed over the hills, banking the earth around to make it tight. The sun shines through the pane of glass, warms up the earth, and starts the seeds two or three weeks sooner than they would start without this protection. When the vines get large enough the lights of glass are slipped out, and the box serves as a protection from the bugs, as well as from the cold winds. Now, the great improvement in these boxes is, as you will notice, that they pack one within the other, so they can be nested and carried about, or stored away in a small compass. In fact, they are almost like solid lumber.

Of course, their use is not restricted to squashes alone. They can be used for cucumbers, melons, cauliflower, or any thing else that you discover by experience will bring a good price in your market a little in advance of the regular season. My opinion is, that they would pay well for forwarding early potatoes. Our town of Medina won't pay very much money for fancy vegetables at high prices; but they will pay from 40 to 50 cents a peck for early potatoes, and they will take a good many of them too. We are planning now to use 400 or 500 such boxes, to give our Early Ohio potatoes a big start next spring. I have ascertained by careful figuring, that these boxes can be furnished for 10 cents apiece, or 100 for about \$8.50. Glass, 8 x 10, will cost you by the box not to exceed 3 cents per light. If you are careful not to break the glass, it is worth all its costs, almost any time. We have been using hand-glasses with a gable end of cloth; but they are unwieldy, and rickety to handle. The boxes shown above can be moved about in a wagon, to put in place, and the lights of glass slipped in afterward, so as to avoid

breakage; that is, the glass can be handled by itself, and the boxes by themselves.

Of course, the matter of finding a market for the stuff we raise is always before us, and is always one of the great important problems. While traveling, I took particular pains to see how largely vegetables and garden-produce entered into the bill of fare of our different places of refreshment. I was so absorbed with what I saw and learned at Arlington that I could hardly take time for my meals; but I knew that it was impossible for me to do good solid work during the few hours I was to stay, in hunting up valuable facts for you, my friends, without my regular meals; and when I waited in a restaurant for my dinner I began wondering whether the Arlington eating-houses would show on their tables the good things I saw abroad in the fields. Well, this first dinner consisted principally of rolls bought from the baker's wagon. The lady who kept the place went out to the wagon and purchased them while I was sitting at the table. Not a vegetable greeted me. For supper I stopped at the only hotel in Arlington. To get to the dining-room I was obliged to pass through a whiskey-shop. The landlord explained that they had just finished supper, but he guessed the girl could find something for me. What she "found" was bread and butter—both bad; some greasy boiled ham—*very* bad; not a potato, not a vegetable of any kind. I concluded I should have to make up for the lack of other things by a piece of berry pie which she shoved at me toward the close of my meal. The berry pie was bad too, as well as the coffee. The girl acted as if she felt injured because I came in to supper after the rest had supped. There was one consolation, however: It did not take me long to finish my supper, and so I had the more time for the gardens. I thought that perhaps the landlord would name a moderate sum, in consideration that there was not much left after their regular meal: it was, however, "A half-dollar, sir." I presume likely his interest centered more on the contents of the bottles behind him than in giving a customer a "comfortable" meal. I wonder if the Arlington people have not got something like our Ohio Dow law by this time. If they have, mine host has probably gone out of the business, for he certainly could not make a living furnishing such suppers for half a dollar, for his patronage would soon be lost.



Now a word in regard to the girl who waited on me. Had this woman had the Savior's love in her heart, it would have been a pleasure for her to wait on a stranger, and hunt up the best that could be found for him under the circumstances. She knew, or might have known, that her employer received half a dollar for the supper she was to furnish, and it was her duty to reason something like this: "If we get half a dollar, we can well afford to give this stranger the best the house affords." One who is building up a business, or assisting to build up a business, feels thankful for patronage, and I do love to see people show their thanks in looks and actions, under such circumstances. A pleasant, cheerful willingness to wait on the great traveling public, is worth more than money in the bank to any man or woman who wants to succeed, whether such persons be gardeners or hotel-keepers.

Well, I did not succeed in finding any fine vegetables on the tables at Arlington, so I thought I would try the great city of Boston. I was told that the farming and gardening community generally stopped at the New-England Hotel, as it is quite near Boston's greatest market. I was disappointed in one thing at the outset—I could not have any breakfast before 6 o'clock, and 6 o'clock in Boston is about 7 o'clock in Ohio; therefore I walked over miles of the city, before breakfast was ready. Now for the vegetables seen displayed in such wonderful profusion, right close by this large hotel. Well, for breakfast I had just *two baked potatoes*—not another thing in the vegetable line.

At one of the railroad eating-houses on the way home I was served with a dinner comprising almost all vegetables grown in gardening. It cost 75 cents. I took breakfast on the dining-cars, for which I paid one dollar. I hope you will excuse me for saying that it seems almost wicked to pay a dollar for a breakfast, especially where one's wants are few and simple. One reason why I decided to have a dollar breakfast was, that I wanted to see if I should find the products of the garden as well as of the apiary here. I was abundantly satisfied. The dining-car proprietors not only provided almost every vegetable in their bill of fare, known to the garden, but the dishes were cooked with wonderful culinary skill. The waiters were pleasant and courteous, and the whole paraphernalia of the dining-table is like a beautiful picture. Fruits are served from almost every clime, and these, too, are the best and *handsomest* that can be bought for mon-

ey. I confess that I greatly enjoyed such a breakfast, for the proprietors evidently spared no pains to make it worth a whole dollar; and the thought that you were sweeping over the landscape at the rate of forty miles an hour while you sipped most excellent coffee, and tasted of the viands prepared with the best skill that the present age affords, helped to make one feel that a dollar invested occasionally in this way was not so very bad an investment after all. The market-gardener who supplies the dining-room cars ought to be one of the most progressive ones of the present age.

Now, then, is it advisable to let vegetables and garden-stuffs have a place on our tables every day? and should they enter largely into what goes to make up our "daily bread"? I think that, in a sanitary point of view, the question has been fully decided. It is true, people sometimes get into summer difficulties by eating fresh fruits and vegetables; but I believe such troubles are brought about oftener by a scarcity of fruits and vegetables than by a surfeit; that is, on tables where fruits and vegetables are seldom seen, everybody is so ravenous for them when they make their appearance, nature is upset by too large a dose on too short notice; whereas, had there been fruits and vegetables at each meal, more or less, *the year round*, nature would suffer no such shock, and no bad results would follow.

The appointments of the meal I mentioned, in the dining-room car, were such as to make one feel pleasant and happy; now, of course, I would not recommend that every day laborer or farmer should deck his breakfast-table with cut glass and silver; but I do think there might be a very great improvement, and with no great outlay either. The women-folks (if not overworked) are ready and willing, and will gladly do their part. A few flowers put in some pretty little vase might prove one of the best investments ever made for the breakfast-table, just because the sight of them calls out our better feelings. Now, a surprise in the way of new vegetables nicely prepared may accomplish the same object; and suppose they should divert conversation during the meal to the discussion of new fruits and vegetables, seed catalogues, etc.; suppose, when the radishes are passed, Johnnie proudly announces that *he* raised them in *his* garden; or suppose that papa announces that the peas we have for dinner are the celebrated Stratagems, advertised through the papers so much, and through the seed catalogues,

and so on; who can estimate the effect on these little characters just forming, gathered around the family board, in contrast with having the talk during the meal occupied by scandal or neighborhood quarrels, lawsuits, and such like? I need not tell you how hard the mother toils to provide food that she knows the little ones like. Who has not noticed her smile of pleasure when some little chick announces, "O mother! where did you get such nice squash? I like squash, I do."

Now, my friends, we can not all of us be engaged in agriculture as farmers, but we can be gardeners, at least to the extent I have described on some of the earlier pages of this book; and whatever our calling or profession, we must certainly meet together to take some food of some kind, at least two or three times a day—three times, I believe, as a rule. What can we do to make these meetings profitable, and to strive to have them lead toward righteousness and godliness? I feel sure that one great means of leading our little flocks heavenward is by the associations of these daily meals; and when the head of the family bows his head to give thanks to the all-wise and kind Creator, is it not his duty to see that the table is well supplied with something to make the simple prayer consistent? Let there be something placed before the little ones to lead them to feel thankful to the great Giver of all good. What shall it be but the products of the soil, largely, even if such products must come from the market-wagon?

Fruits and vegetables are already largely used for presents to the sick, presents to friends, and for presents to the loved ones at home. Some years ago I happened to be in the large city of Cleveland, in company with my old pastor, Rev. A. T. Reed. A little before train time he made the remark that he never liked to go home from the city without taking some sort of a little present for the children. What should it be? and who has not had similar feelings? Great shops and stores were all about us, holding out inducements to purchasers, and many of these shops and stores were kept to supply this very want. What sort of a present should a minister of the gospel carry to his children? I watched him with much interest. He went to a green-grocer's, and purchased a little basket—one that held about a peck, for instance. The basket cost only a nickel, but it was new and clean. This made it proper for the occasion and circum-

stances. Now, then, for the contents. I believe it was mostly if not all vegetables from the garden. As it was early in the spring, no such things had at that time appeared in our Medina market, and I especially remarked how handsome a bunch of beets looked. They were grown rapidly under glass, and were some of the choice varieties advertised in our seed catalogues, that look so very tempting when first taken from the soil. The tops looked fresh and green also. Well, the sight of the contents of that basket had something to do with giving me the "garden fever." The basket and contents cost some 20 or 40 cents; but as I glanced at them repeatedly I could not help but think I agreed with him that there was nothing in that whole great city so pleasing and appropriate for the loved ones at home as this little simple token of his love and remembrance of them—a little basket of garden vegetables. I have always had a particular fancy for beets and radishes tied up in neat little bunches ever since that time; and while I think of it, early beets are one of the things with which the market has never been overstocked, to my knowledge. For many months during this season just passed, early beets retailed in Cleveland at 10 cts. per bunch, or 80 or 90 cts. per dozen bunches. At the same time, fine large bunches of radishes and onions were selling for 15 to 20 cts. per dozen bunches. Some way it seemed as if the great vegetable-loving public could never get beets enough.

Early beets were the second crop on our "New Agriculture" grounds; that is, they were planted between the lettuce; and when the lettuce was all sold off, the beets came on. The boys on the wagon reported every day, right along, "Beets sold out, and more wanted." And so the demand kept up until I began to be greatly astonished. After people began to have plenty of them in their gardens, however, the demand dropped off. They are hardy, and easy to raise. Thousands of plants can be easily secured in boxes in the greenhouse, or in boxes in the windows I have described; and just as soon as the weather will permit any thing to grow at all outdoors, with the right kind of soil and a protected situation the beets will take right hold and thrive. I think it would be an excellent investment to build cheap hot-beds or greenhouses expressly for early beets and nothing else. I think a good demand for them would spring up in almost any locality.



## HEADS OF GRAIN FROM DIFFERENT FIELDS.

THAT NEWLY DISCOVERED, NAMELESS BEE-DISEASE.

**D**ON'T call it a new disease, for it may prove to be an old one. I first noticed it some three or four years ago in the summer time, among some bees I had recently purchased.

I had lost most of my bees one cold winter, and bought 12 two-frame nucleus colonies, and used my old combs. I paid but little attention to it at first, thinking it was something temporary, and perhaps similar to what I had often noticed among bees late in autumn. It did not disappear; but the next spring and summer, and even since, that same kind of used-up fellows are to be found in front of a few hives. Perhaps the old combs had something to do with it. I have thought the trouble might be caused by some vegetable or animal parasite. Something has made the fur fly on them. I suppose a parasite might do this, or could not the bee get rid of the fur itself while scratching around to get relieved of the difficulty? The other bees also might have something to do about it, as they often drive them out as they do drones, only I never saw them trying to sting one. It does not spread very fast. I think it is slightly contagious, but not at all infectious. None of my swarms have been ruined by it, but it must be injurious to have a few dropping prematurely out of the ranks every day. I prefer to see them all wearing themselves out by gathering honey all the day long from "every opening flower."

Walpole, N. H., Aug. 23, 1886. J. L. HUBBARD.

I should judge from your description that you have something very near akin to the nameless bee-disease. We have generally cured that phase of the nameless disease which has visited our apiary by the introduction of a new queen. It would seem, however, that yours originated with the combs or brood.

### RETURNING SWARMS.

On p. 623, GLEANINGS for Aug. 1, Mr. J. E. Pond, Jr., comments upon my article in regard to returning swarms. He does not seem to understand whether my plan is to be used only in "accidental cases" or otherwise. I would suggest, that my plan be used only when swarms issue, no matter whether swarming be the general rule or the exception. Of course, my plan would not work very well if no swarms issued; and if swarming be entirely prevented, there would be no swarms to return. Now, I do not claim that returning swarms will give the largest yield of honey, or that the bees will do better otherwise by being returned. It is simply a plan to return swarms to the parent stock. I think, though, they will do as well returned as when drone and queen traps are used to prevent swarming. Mr. Pond has not read the article correctly. He speaks about the trouble of watching to see which hive the bees issued from. The beauty of my plan is, that it is not necessary to know which hive the swarm came from. The queens being removed, the bees will return to their own hive, even if swarms unite, as they generally will when they issue at the same time, and you do not have to watch your apiary any more than usual. I have returned swarms all summer, and do not know of an instance where they went into any other hive than their own.

### DRONE-EXCLUDERS.

Queen and drone traps can not always be used. Young queens and drones must fly out. They can not be confined to the hives. It will not do to depend too much on drone-traps, and I will suggest how they might fail to prevent swarming. They will keep in the queen, but not the bees. We will suppose the swarming fever has broken out in a colony, and that a swarm from a neighboring apiary should come by. The bees would probably unite with this swarm, leaving their queen in the trap.

CHAS. A. WOOD.

Tarrytown, N. Y., Sept., 1886.

We agree with you in regard to the queen-trap. It is not calculated to prevent swarming, strictly speaking, though it may discourage it, but to automatically catch the queen when the swarm does issue. This accomplishes the same result as clipping the queen's wing; but with the trap the apiarist is saved the trouble of catching the queen. Moreover, all her fair proportions are preserved.—It is true, if the trap is allowed to remain attached to the hive, the bees, after making several attempts to swarm, taking with them the queen, will by and by become disgusted with her majesty. The probable outcome will then result in her death. In the A B C of Bee Culture, now under revision, I caution beginners in regard to this very particular.

### KEEPING HONEY.

Now that the season is about over for producing, how to keep it is next in order. Sulphur fumes have been relied on, but it does not destroy the egg of the moth; besides, it renders the honey unsalable for several days on account of the disagreeable odor. But to look the honey over every week, waiting for cold weather to kill the moth, is a tedious job, if you have a ton or two. Please tell us the latest new idea on the subject. Is tiering up and leaving it on the hive till October a good plan? or will the bees uncap and carry it down stairs to feed the kids?

W. H. RITTER.

North Springfield, Mo., Aug. 1, 1886.

The latest idea on the subject, friend R., is, so far as I know, keeping Italian bees. With these we have not seen a moth-worm in our honey for the last two or three years. You may remember that Doolittle gives a similar experience. I certainly would not go to the trouble of fumigating comb honey until I saw traces of the moth-worm in the comb. Where comb honey contains pollen I believe there is a much greater tendency to moth-worms. I would not leave honey on the hives at all until October, because it is certain to darken it so as to injure the sale of it more or less.

### EXCHANGING COLONIES TO STOP ROBBING, AS RECOMMENDED IN THE A B C OF BEE CULTURE.

In 1885 I had a swarm come off on the 4th of July. It was a small one, but I fed it and brought it through the winter; and after I got the A B C I determined to do away with all my old hives, or boxes, and use only Simplicity and chaff, after your pattern. I transferred about the first of May into my hives. Well, I found that my July swarm had lost its queen, and the other bees were robbing it in the bargain. I ordered an albino

queen; and on May 11th, after trying every thing else, I could not get ahead of the robbers; so I tried dealing on the rogue plan. I moved the colony, that was doing the most robbing, from its stand, and placed the July swarm in its place; and I found that it was not long until I had a good working colony, and they filled the first story of the Simplicity; and on the 11th of this month they threw out a very large swarm. I then examined the albinos, and found that they had 5 queen-cells on hand. Now, what I want to know is, How am I to deal with those 5 cells? as I shall like to save the queens if I can, and introduce them into some black colonies that I have; and I know that, if left to themselves, they will be destroyed, or possibly swarm out, as it is too late for that kind of business. I think that, by feeding the swarm that came off on the 11th, I may be able to carry it over the winter; they are doing good work. I put them on fdn., and they are drawing it out very fast, and gathering very fast.

I am clerking in a store in this place; and at night, after working-hours, I have made 5 chaff hives and 4 Simplicities; and this winter I expect to make more of the chaff for next season.

A. L. LANE.

Duncannon, Perry Co., Pa., Aug. 18, 1886.

Friend L., there is no way you can utilize queen-cells unless you have queenless colonies to receive them. A lamp nursery would receive them, it is true; but you would be in just as much need of queens to receive the hatched queens as you were before. It does not need, however, a whole colony of bees to take care of a queen-cell until the queen begins to lay, and herein is the saving of utilizing nuclei. One of your black colonies should have been divided into two or more parts a few days before queen-cells were ready to be removed.

#### BEES VERSUS FRUIT.

Mr. A. Cameron, on page 619, has suggested a grand idea. In his defence of bees, No. 2, it should say, "Without bees or *other insects*, many kinds of bloom would not bear," etc.

In No. 3, he says they do suck the juice from *all* broken fruit. The word *all* should not be used, as there are many kinds of fruits they do not work on.

There is some ignorant prejudice working up against me, that my bees work on apple-bloom so that our trees do not bear enough apples. Nevertheless I have nearly 60 acres of standard orchard, and a general nursery stock for sale, besides the orchard. How inconsistent, that I would go to the expense of raising a large apple-orchard, then keep a lot of bees to hinder it from producing me an income! Send me a sample of Mr. Cameron's hints, as soon as printed.

E. LISTON.

Virgil City, Cedar Co., Mo., Aug. 5, 1886.

#### FEEDING MILK DURING A DROUGHT; HOW BEES LIKE IT.

You wish to know if any one has tried feeding milk during a drought. Yes; and I will give you my method of doing so. I take new milk, direct from the cows, boil it a little, which makes the clot rise to the top. I skim this off and add a teaspoonful of sugar to a quart of milk; but sometimes I do not put in any sugar at all, and the bees seem to take it "straight," just as well after once getting started.

Boiling prevents souring, and coagulates the excess of fatty matters, which are indigestible, and are best removed.

#### HOW TO FEED.

I made some boards, as described in the A B C, for giving water to bees, and inverted glass fruit-jars of milk on them. Is it a success? Yes. I have a lot of young Yorkshire pigs, and it is hard to tell which acts most like a hog, the bees or the pigs.

The drought continues, and for severity it has not been equalled for 35 years, says the "oldest inhabitant." During the early spring, honey was abundant; but making swarms and nuclei it was speedily used up, and I have been feeding since July 1st, and I have not taken a pound of honey this season. The honey-dew never failed us before in a dry season; but this year it is a total failure with every thing.

H. W. PALLIES.

Mehama, Marion Co., Oregon, Aug. 10, 1886.

#### BEES GOING DOWN A STOVE-PIPE FROM WHICH SMOKE WAS ISSUING.

A few days ago I was baking a pie which I had sweetened with honey. Our oven was defective, so that a draft went directly through it. In a little time I saw bees coming down the pipe and escaping half dead, through a little opening on top of the oven. I went out and found that a lot of bees were darting into the smoke, while now and then one found its way into the pipe. That pie was expensive, as I think 200 bees perished before it was baked. As soon as I took the pie out of the oven the bees ceased "fighting with the pipe." Perhaps you would do well to ask some of your readers if the above is not the real secret of bees fighting with stove-pipes.

MRS. JAS. FENNELL.

Shelburne, Ont., Canada, Aug. 18, 1886.

#### HONEY TO BE NAMED.

I send you this day a small bottle of something my bees have been gathering, principally through July. I think it will kill the bees next winter. Is it honey-dew?

47—E. B. SMITH, 70.

New Milford, Susq. Co., Pa., Aug. 30, 1886.

Friend S., I do not think the sample you send is honey-dew, nor do I think it will kill the bees. The color is pretty fair, and the flavor comes, it seems to me, the nearest to the wild sunflower, growing in swamps, of any thing I know of. Have you not a swamp, within a radius of a mile or so of your apiary, that was covered with yellow blossoms when the bees were gathering this honey?

#### IS HONEY-DEW THE CAUSE OF THE NAMELESS BEE-DISEASE?

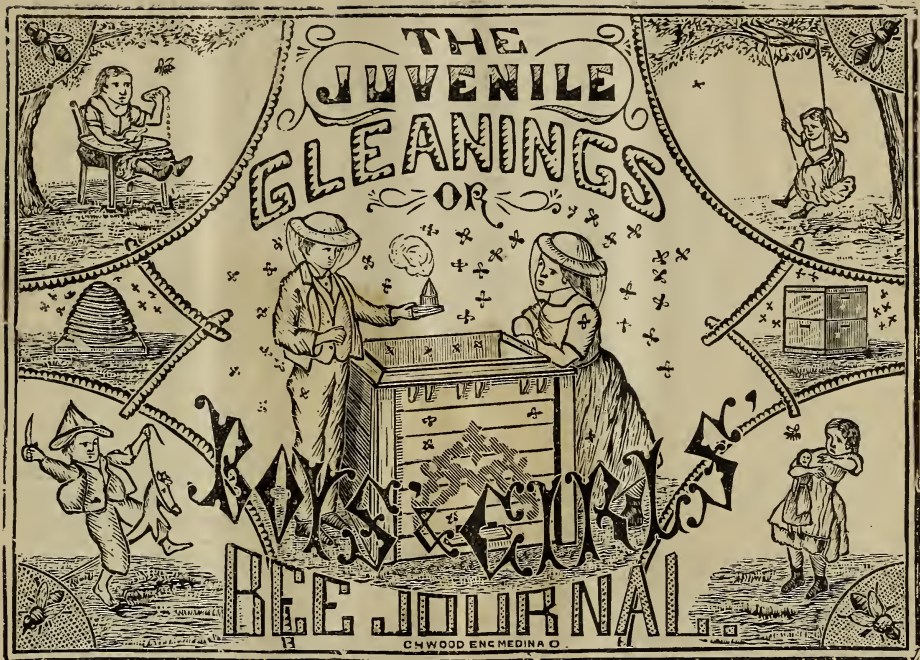
In GLEANINGS, August 15, page 644, H. D. Mason mentions that new bee-disease. I think it is certainly caused by honey-dew. By removing combs containing said honey, I can see no trace of it. I have one frame of honey I think would start it in any colony that it was given to. You can have it to experiment with, if you wish.

SAMUEL HEATH.

Rimer, Pa., August 24, 1886.

No doubt, friend H., the honey you have affects the bees so as to make them resemble those having the nameless bee-disease; but as we have seen it so many times when no honey-dew was being gathered, I am quite sure that honey-dew is not always the cause of the trouble. We do not care for any samples that will make bees sick. Thanks for your kind offer, however.





He that is faithful in that which is least, is faithful also in much.—LUKE 16:10.

#### MYSELF AND MY NEIGHBORS.

THE OHIO STATE FAIR AT COLUMBUS; A GOOD DISPLAY OF HONEY, ETC.

IT seemed almost impossible this year that I could visit the State Fair at all: but perhaps it may be worth something to you to know how much can be done in a short time. The finishing of our new factory, putting in the new machinery, etc., requires my presence almost constantly; but the workmen finally concluded I could be away one day, without making very much trouble. Accordingly, Neighbor H. and I figured up that, by making a very early start in the morning, we could strike the train at a station about 16 miles distant, so we could reach Columbus about one o'clock in the afternoon. To get home that same night, we were obliged to take the train again at 5 P.M., and make another buggy-ride across the country, between the small hours of 11 and 1 o'clock at night, giving us just four hours on the fairgrounds. Well, we planned every thing so that nothing should interrupt us during these four hours. We took a lunch on the cars, so as to be ready to go through the grounds with a rush; and I confess I rather enjoyed my hasty visit. Our new fairgrounds, near the Experimental Farm, are a wonder. Forty-one beautiful spacious buildings contain the exhibits, farm stock, etc., and the architectural beauty of these buildings was, to me, simply a wonder. They cost a pile of money, it is true; but I think the State of Ohio can well afford such an investment for the encourage-

ment of her rural industries. Of course, they don't have any beer on the Ohio Fairgrounds, and the railroad companies have helped to manage the thing so that the beer-men have not been able to get a saloon very near the entrance. The saloons were fewer in number, and smaller in dimensions, than they were a year ago, and it really looks as if they were going to get ashamed of themselves, and vanish from the presence and sight of an intelligent Christian people.

The honey display was finer than any thing I had ever before seen in the State of Ohio. I would call especial attention to the display of both comb and extracted honey by Mr. W. S. Goodrich, of Worthington, Franklin Co., Ohio. The display was very large, and the honey had a crystal clearness that astonished everybody.

"Friend G.," said I, "I suppose this is, of course, clover honey; but how do you account for its beautiful light color and transparency?"

"Why, Mr. Root," replied he, "if I have made no mistake, this whole crop of honey is from *alsike* clover. The drought was so bad that white clover was almost used up, and I am afraid I should have had no honey-crop at all had it not been for my eight acres of *alsike*."

I give this for the encouragement of those who are thinking of raising *alsike* as a forage and honey plant. We have had abundant evidence of its worth for hay for milch cows, and now it seems as if it would really pay to raise it for honey alone.

Our good friend Mrs. Jennie Culp was

moving about among the bee-men and bee-women, and she laughingly told me she had 200 gallons of beautiful clover honey this season. She had it stored in stone crocks, and the crocks were making her a deal of trouble by bursting open as the honey begins to candy. Did you ever hear of such a thing?

Mr. Earl Flickinger also made a very fine display; and one thing that pleased me about his exhibit was, that his good wife stayed behind the railing, and answered questions and explained things.

Our old friend Aaron Benedict was a little in the background, talking bees to people who were curious, while a swarm of nicely marked Italians hung from his whiskers.

One pleasant part of it to me was, that the comb honey was stored in sections of our make, and the sections were mostly neatly incased in bright new cases of our make. Much of the liquid honey also was exhibited in jars, pails, and tumblers bought from our establishment.

I have not space here to tell of the many kind friends whom I met, and who seemed rejoiced to see me, even for only four hours. Have I any right to let business keep me away from seeing these neighbors at least once a year — these *Ohio* neighbors of mine? A bevy of ladies expressed a desire to shake hands with the editor of GLEANINGS; and after we had had a pleasant talk, one of them made a remark that carries with it something of a moral. She said, in substance, "Mr. Root, much as we prize GLEANINGS, I am ashamed to tell you that we carelessly omitted to renew our subscription, and we are not having it this year at all. It was allowed to stop through pure neglect."

In the last *Prairie Farmer*, Orange Judd speaks of meeting old friends in the Far West, during his travels, and he says he met hundreds of people who said the same thing about letting the *American Agriculturist* drop when he was editor. They really valued the paper, and had no idea of letting it stop coming; but it was put off, month after month, and finally they didn't have it "at all any more." Now, I didn't feel like urging these good friends of mine to hand me a dollar just then and there, under the circumstances, that I might send them our journal again; but it occurred to me that the proper way was to have some friend of GLEANINGS go over every neighborhood, take the money and forward the names; and, of course, the one who does this ought to have pay for it. Accordingly, we furnish GLEANINGS to such an agent for only 75 cents each; that is, for collecting the names of all those who would be likely to subscribe at your postoffice. The supply-dealer of the neighborhood would be, obviously, the party to do this. How shall we get this started? Well, now, dear friends, I do not know any better way than to ask you to agree among yourselves who shall be the agent at your postoffice, and let him look up all the parties who really want GLEANINGS, but don't like to write a letter, etc. One-fourth of the amount of money received would, I think, pay well for the trouble of visiting them in their homes, and making a neighborly call.

At our Abbeyville Sunday-school, a few

weeks ago, the attendance during the hot weather got down to as low as 17, I think. I gave the children a little talk, and asked them how many would really try to bring somebody else to Sunday-school the next Sabbath, in order to keep our school from "dwindling" — not from *spring* dwindling, but from *mid-summer* dwindling. Up went a lot of hands, and I knew by the smiling faces that the work would be done. Next Sunday our seventeen had increased to forty. Now, friends, I do not often urge you to help to increase the subscription-list of GLEANINGS; but the larger the list, the more money can we afford to expend in engravings, and in traveling to hunt up valuable facts for you. Besides helping your paper, you will get better acquainted with your "neighbors" by going round among them in the way I suggest; and what is there more more important in this world than pleasant relations between "ourselves and our neighbors"?

#### FULL SHEETS OF FOUNDATION, VERSUS STARTERS, FOR BROOD-COMBS.

EXPERIMENTS IN REGARD TO THE SAME, AS REPORTED BY A JUVENILE.

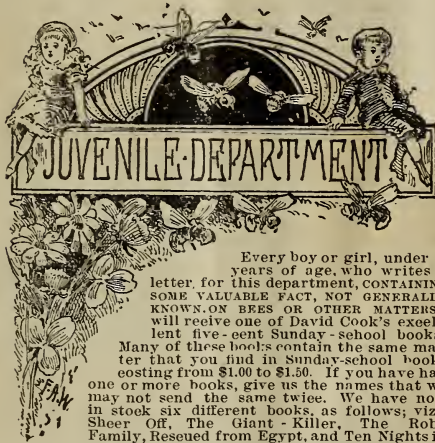
WE got only 302 lbs. of comb honey, and increased from 34 to 53. We followed Mr. Hutchinson's plan in hiving 16 swarms; viz., on five empty frames with narrow starters, a queen-excluding honey-board, and a case of 28 sections filled with foundation. We should have had better results if the season had been good. All the swarms went at once to work in the sections, and the combs in the brood-chambers are nice and straight. Nos. 7, 11, 14, and 16, had no drone-comb. Nos. 2, 5, 10, 12, 13, and 15, had each from three to six inches square of drone-comb. No. 3 had nearly all drone-comb; lost their queen, and had fertile workers. Nos. 4 and 8 had each about one-half of drone. Nos. 1, 6, and 9, had each nearly one whole frame of drone-comb. We don't know the age of the queens. Papa wishes some way could be found out to prevent the bees from building so much drone-comb. Would drone-fdn. in the sections prevent it? CORA MAJOR.

Cokeville, Pa., Sept., 1886.

The report of your experiments is valuable indeed, as it is just the point at this time we are all eager to know. Your experiments seem quite favorable to friend Hutchinson's position of the limited or non-use of foundation in the brood-chamber. Still, from results as above recorded, I think I should prefer full sheets of foundation, unless something can be done to exclude, or at least more nearly exclude, the drone-comb. Perhaps the difference in treatment of the several colonies might obviate the difficulty. Well, supposing we can obviate said difficulty, how are we to prove that the exclusion or partial exclusion of foundation in the brood-chamber will be any cheaper than full sheets of foundation, since able experimenters disagree so widely as to the original cost of wax, as adduced from the consumption of honey. The result of your experiments is so carefully given, friend Cora, that we will



send you any thing you may choose, from the 25-cent counter. If any of the other juveniles can report upon the above question, we will do as well by them. In regard to your last question, I should be inclined to believe that the use of drone-fdn. in the super would make little if any difference in the amount of drone-comb built below, though I can not say from experiment. Perhaps friend Hutchinson can clear up some of these things. ERNEST.



Every boy or girl, under 15 years of age, who writes a letter for this department, CONTAINING SOME VALUABLE FACT, NOT GENERALLY KNOWN, ON BEES OR OTHER MATTERS, will receive one of David Cook's excellent five-cent Sunday-school books. Many of these books contain the same matter that you find in Sunday-school books costing from \$1.00 to \$1.50. If you have had one or more books, give us the names that we may not send the same twice. We have now in stock six different books, as follows, viz.: Sheer Off, The Giant-Killer, The Roby Family, Rescued from Egypt, and Ten Nights in a Bar-Room. We have also Our Homes, Part I. and Our Homes, Part II. Besides the above books, you may have a photograph of our old house apiary, taken a great many years ago. In it is a picture of myself, Blue Eyes, and Caddy, and a glimpse of Ernest. We have also some pretty little colored pictures of birds, fruits, flowers, etc., suitable for framing. You can have your choice of any one of the above pictures or books for every letter that gives us some valuable piece of information.

"A chief's amang ye takin' notes:  
An' faith, he'll prent it."

#### THE LANGUAGE OF BEES; A TALK TO THE LITTLE FOLKS ON BEE-TALKS AND "OLD HEN" TALKS.

I HAVE been telling you something of the way in which bees talk; but bees are not the only dumb friends (if, indeed, I may call them dumb) that have their way of talking. Did you ever hear your old biddy sing? It is true, she does not make very much music, but she is happy—yes, happy as a bee when he sings forth his notes of rejoicing while in the clover-fields. Old biddies not only sing, but scold. I dare say you have tried to put your hand under an old sitting hen. What does she say? Something to this effect: "If you don't get away right off I will—well, peck." How her eyes do snap, and her cluck, cluck, has no uncertain sound. That big old rooster, so big and so proud, how he does strut, worse than Johnnie when in his first pair of pants! and as he mounts the fence he crows forth his challenge to all the other roosters, "I am monarch of all I survey." When one of your nice biddies comes off the nest just after laying an egg, what does she say? "Cut, cut, cut, ka-dar, cut," or, in our kind of talk, "Look, look, look, look what I did." Another hen, a little jealous, perhaps, replies, "Cut, cut, ka-dar, cut," or, "Well, well,

what of it?" The old rooster, if he feels like it, thereupon claps his wings and—"Cock-a-doo-dle-do!" or, "What great things we can do-o-oo!" Perhaps your mamma may think I am a little fanciful. Well, perhaps I am in this last; but I think we will all agree that our old biddies can talk, and that right plain. For instance, the mother of a brood of chickens, on seeing a large bird or hawk fly over, utters a shrill cry, at which the chicks may be seen to skulk off. When the old hen espies a mouse or snake in the grass, she will utter a different note. The chicks, instead of hiding in the grass, will stretch their little necks to see where the danger is. When the old biddy finds a choice morsel of food, she calls the chicks to her. It has been estimated by a prominent writer on poultry, that chickens have as many as twenty different signals, or ways of talking to each other. Little folks, can you understand all these signals? Did you ever see how an old rooster talks to his hens? It is real funny. As I have told you, bees have their signs—or, if you please, their language, by which they can express all their little wants, needful for their purpose. The rooster crows, the hen cackles, the queen-bee zeeps; the bee, by the peculiar behavior of his wings and body, gives signals, each of which is intended for a purpose, and which is understood by his kind. God has kindly made all his creatures to know and understand each other.

Now, little folks, I want you to watch and study the actions of bees and chickens, or of any of God's creatures. Learn how they talk to each other, and tell us about it in GLEANINGS. You will then see how well God has done his work. ERNEST.

#### HOW A HORSE WAS SAVED FROM BEING STUNG TO DEATH.

Last spring pa had a horse plowing in the garden, near a hive of bees on the opposite side of the fence, and all at once they almost covered the horse, Charley, and nearly stung him to death. Pa took one pound of soda and dissolved it in water and rubbed him well with it, and in a short time he seemed to be easy. The horse is well now, and as fat as a butter-ball. Pa has 26 colonies of bees and 17 Simplicity hives. This has been a bad season for honey, as it has rained nearly all summer.

Shubuta, Miss.

BELL LOCKETT.

A friend two miles distant had his horses stung so badly that he feared they would die. He did nothing for the horses and they got well. ERNEST.

#### MAKING A BEE-HOUSE BEE-PROOF.

Pa has 30 colonies. He had but one swarm this year. The bees did not do as well in the spring. When the peach-bloom was just opening there came a snow and killed the blossoms. But they are gathering honey off the cotton bloom. Pa has a bee-house, on the inside of which he has pasted paper all over to make it bee-proof. He has a wire door that shuts on the inside, and a wooden one on the outside. When he wants to extract his honey he gets inside and opens the wooden door and shuts the wire door. Pa likes your journal. I like to read it too. ELIZA MARTIN, age 10,

Mark, Sebastian Co., Ark., Aug. 18, 1886.

## THOMAS HORN.

Pa had eight colonies of black bees, and he did not winter them. He lost them all, so my three brothers sent for a colony of Italian bees to Thomas Horn. They say they are better workers than the blacks. Pa says it is the best colony we ever had, and he thinks Thomas Horn is an honest man. Pa never heard of such a thing as horned toads, and he would like to know what they are. He says he thinks they are not the kind that we have around here, for he thinks Mr. Root would not keep them in his apiary, for they eat bees.

LENA ZEHR, age 13.

Indian River, Lewis Co., N. Y., Aug. 8, 1886.

Thank you. We are very glad to hear a good word for Thomas Horn; but so many complain of him as dishonest that we warn our friends against purchasing of him. Your logical connection, as the big folks say, between Thomas Horn and "horned toads," is rather abrupt, is it not? However, we have had only one horned toad in our apiary, and that simply as a curiosity. I can not say as to whether they would do much if any harm in larger numbers.

## ONE QUEEN SWARMING SEVEN TIMES.

Papa has a queen that has swarmed seven times this summer. He has 32 hives. My brother has a hive of bees, and he likes to go out and look in the hive. Sometimes I go out and help papa when he has a swarm. Papa bought a dollar queen of you last year, and it swarmed and went to the woods 18 days after. He bought another this spring, and it swarmed three times, but died in front of the hive the last time. The kind of shade-boards we like best are made out of old barrel-staves. We use two pickets to rest on the hives, and nail the staves on them. We make two out of one barrel.

MAMIE G. STOW, age 10.

South Evanston, Cook Co., Ill., Aug. 29, 1886.

Well, Mamie, if I had a queen that had swarmed seven times, and should give promise of doing as bad or worse next season, I would—well, kill her and put one in her place that would "stay at home" better. It doesn't pay to fuss with such queens, if their everlasting inclination to swarm can not be stopped by some reasonable means, such as more room, more shade, or better ventilation.

ERNEST.

## WHEN A SWARM ISSUES, DOES THE QUEEN ALIGHT FIRST?

When a swarm issues, does the queen generally alight first, or the bees? You will notice on page 302, May GLEANINGS, Mr. Brayman said he lay by the hive watching for the queen, while his wife watched where they were going to cluster; so I take it from that, that the bees commence to cluster before the queen.

GRAHAM S. DEWITT, age 14.

Homowack, Ulster Co., N. Y.

My young friend, I think that the bees, as a rule, alight first, and the queen when a part of them have commenced to cluster—at least I have watched quite a number of swarms while clustering; and when I have been able to get my eye on a queen it is, as a rule, when they are about half clustered. Young queens are especially apt to be run-

ning out of and in the cluster, taking wing, and then coming back again.

## 13,000 LBS. OF HONEY FROM 200 COLONIES; HOW TO MAKE A HARVEST DRINK OF HONEY.

Pa has over 200 colonies of bees. He has extracted over 13,000 pounds from them this season. It has been very dry weather here for quite a while, and the white clover has nearly all dried up. I will tell you a way of making a drink that is better than to drink so much cold water on these warm days. Take  $1\frac{1}{2}$  teacupfuls of honey;  $\frac{3}{4}$  of a cup of vinegar, and one heaping teaspoonful of ginger, to a gallon of water. We call it "ginger ale." Pa's bees are not gathering much honey now.

GRACE POPPLETON, age 14.

Williamstown, Iowa, July, 1886.

Well done, Grace. Your home-made ginger ale, I should think, would be tiptop; but isn't half a teacupful of honey to a gallon of water making it pretty sweet? When one is tired and thirsty, some sort of a drink with sweetening in it will give strength and energy almost immediately, as I know by abundant experience; and the ginger seems to have the effect of making the drink "set well," to use a common expression. If our summer beverages never have any thing in them more dangerous than vinegar and ginger, I think we shall all be on pretty safe ground.

## LOOKOUT MOUNTAIN, AGAIN; THE EFFECT OF THE DIFFERENCE IN ELEVATION UPON THE LENGTH OF THE HONEY-FLOW.

You ask in GLEANINGS if the honey season was prolonged on account of the elevation. Our experience is the same as the writer who mentioned that subject before. The clover and other honey-plants come in 14 days earlier in Chattanooga Valley than up here. This mountain is 1800 feet above the valley. Our bees have swarmed three times since I wrote to you June 23th, and we have now 14 swarms of pure Italian bees. They have taken a great deal of honey from the sourwood, and are now very busy on the wild-flowers. There have been two great battles fought on this mountain—one on the 28th day of October, 1863, in which action Gen. Joseph Hooker gained the mountain; and on the 23d day of November, 1863, the Union troops under Generals Hooker, Thomas, and Sherman, drove the Confederate troops under Gen. Bragg off the mountain. The last action was the fierce "Battle above the Clouds." Many marks of this battle remain in the shape of forts, camp-chimneys, rifle-pits, and breastworks. A line of breastworks extends along the northern side of our apiary, and form a windbreak for it. I live at Point Lookout. There are hundreds of people visiting it every month. There are many points of interest on the mountain, among which are Lookout Cave, Point Lookout, Natural Bridge, Rock City, Lake Seclusion, Lulu Falls, and Eagle Rock. The air is very light and healthful.

GEORGE LAWSON.

Lookout Mountain, Hamilton Co., Tenn.

Thanks for your description of Lookout Mountain, so famed in the history of the late civil war. The natural scenery, together with the remnants of that remarkable conflict, fills me with a desire to visit that place at some future time.

ERNEST.



# MAKING PRESERVES WITH HONEY; HOW A SEVEN-YEAR-OLD HELPS PA.

Pa has taken GLEANINGS for years, and I like to read the little children's letters. Pa has 40 hives of bees. I help extract. I carry the honey to and from the extractor. Ma uncaps, and pa takes the frames out and brushes off the bees. Pa made a solar wax-extractor, and it works well. Ma made blackberry and apple preserves with honey, and we like them. We like the apple preserves better than if they had been made with honey, and it is good enough for a wedding-cake. We can not tell it from sugar-cake. ALLIE SHUMARD, age 7.

Panacea, Mo., Aug. 4, 1886.

Thank you, little Allie. We like to hear of all the different uses to which honey can be put.—When I was seven years old I was "afraid of bees," and my pa could hardly persuade me to help him to extract. What a coward I was, wasn't I? ERNEST.

# HOW TO MAKE A QUEEN-CAGE, AS DESCRIBED BY A JUVENILE.

This is my first letter. I caught a bee and pulled its string out. It lived 29 hours and 32 minutes. To make a cheap queen-cage, take a block of wood 1½ inches high, 1¼ inches wide, and 2 inches long. With an inch auger, bore a hole close to one end (on the 1¼ side of the block) 1¼ inches deep. Take a ½-inch auger, bore from the other end until you strike the other hole. Tack a piece of wire cloth over the large hole. Tack a thin piece of wood, bore a small hole in it, place it on top of the wire; fill the ½-inch hole up with candy, and place a plug at the end. VIRGIL H. MOATS, age 13.

The Bend, Defiance Co., Ohio.

Your description of how to make a queen-cage is pretty well done, Virgil, and I think we can "catch on." The cage is something on the plan of the Benton cage. ERNEST.

# TOBACCO COLUMN.

## THE FRUITS OF THE TOBACCO COLUMN.

WELL, Brother Root, I have not forgotten you, although I have not thanked you for the smoker you sent me last year. I am very much obliged. I have kept my resolution so far. It has been over a year since I quit the use of tobacco, and I have had no appetite for it; and by the help of my Lord and Master I never shall use the vile stuff again.

We have had a very dry season—the driest I ever saw. Every thing is dried up. We shall have but little hay and oats. Bees have done poorly. They have swarmed but very little. If we do not have rain soon I shall have to feed for winter. Buckwheat that was sown 3 weeks ago is not up yet. We had a little shower to-day that may bring it up. Basswood did not bloom at all this year. I feel almost discouraged, but I put my trust in Him who is able to help us in every time of need.

Orono, Mich., July 13, 1886.

L. REED.

Seeing your generous offer in GLEANINGS to those who give up the use of tobacco, I have joined the throng that claim the reward (the smoker). If I ever resume, I agree to pay double price for the smoker. I used the weed for over six years.

LEVI E. MALLERNEE,

Cerro Gordo, Ills., July 5, 1886.

Please send to Elmer Divens, Good Hope, Fayette Co., O., one bee-smoker, for quitting the use of tobacco. He agrees to pay cash if he fails.

Good Hope, O., June 23, 1886. B. R. PAXSON.

## A BROKEN PLEDGE, BUT PAYS UP.

Charge me with 50 cents for a smoker on tobacco pledge for my brother, as he has broken his pledge. Arcadia, Kan., July 8, 1886. S. C. FREDERICK.

I have quit the use of tobacco. If you will send me a smoker, and I ever use tobacco again, I will pay you for the smoker. Bees are doing better than ever before. W. J. HESTER.

Eureka Springs, Ark., July 2, 1886.

I am an old tobacco-user, and by reading the Tobacco Column I have resolved to quit; and as sure as ever I resume, which I pray I never shall, I will send the price of the smoker. J. C. SLOCUM.

French Grove, Ill., June 25, 1886.

Some neighbors of mine to whom I read GLEANINGS regularly, and who feel great interest in bees, and who are bee-men in the old-fashioned way, have, by my wish, and through my persuasion, forsaken the use of tobacco for more than one year now. They have given me their word never to smoke or chew again. Please send them a smoker each; and if they break faith I will pay for them.

FELIX W. O. SCHMIDEL.

Fort Ogden, Fla., June 15, 1886.

## INDUCES A FRIEND TO QUIT; ALSO A KIND WORD.

I received the goods the 25th of May in good order. I am well pleased with my frames. I have the 300 frames nearly full of comb and honey. I never saw such a honey season as this, in all of the 17 years of my bee-keeping. There is a young bee-keeper here whom I induced to stop using tobacco. I told him if he would never use it again you would send him a smoker. Will you please send him one? I will pay for it if he uses tobacco again.

GLEANINGS is the best of all the papers I am taking, and I take eight different ones. Our Homes is my best reading. I hope, friend Root, you will have a long and happy life. May God bless all your teachings. JOSEPH SOPH.

New Haven, Mo., June 26, 1886.

## HEALTH IMPROVED.

I have used tobacco since I was five years old, and I don't know when I did commence the use of the weed. I used it the day I started to school, and, feeling it to be a sin against God, and knowing it in no way prepared me to live a holy life, or to serve God in any way, by his grace I have quit it, and am in better health than I have been in for twenty years, and I enjoy more of the presence and fullness of our blessed Lord; so if you have determined to contribute a smoker to every one who quits, you can sell the smoker and invest the amount in religious tracts, and distribute them for the good of humanity and glory of God; and should I use it again I will let you know, and pay you double price for the smoker. L. W. MILAM.

Prescott, Ark., June 13, 1886.

Friend M., I have heard it said, that in the Southern States it was customary for school children to use tobacco; but I did not know before that they ever commenced it at so early an age as five years. Thank you for your kind and encouraging words.

I understand you will give a smoker to all who will quit the use of tobacco. I will abandon the use of it if you will send me one. I give you my promise to pay for the smoker if I ever use the weed again.  
 Longum, Va. \_\_\_\_\_ T. A. WOOD.

I see you give a smoker to all who will give up tobacco. I promise to stop; and if you send me one, and I should break my promise, I will send you the money for it.  
 VISCHER WHIPPLE.  
 Porter's Corners, Saratoga Co., N. Y., July, 1886.

My brother says you give any one who quits tobacco a smoker. I used it fourteen years. If you think I am entitled to a smoker, send it; and if I ever commence I will own up and pay for smoker.  
 Oak Bower, Ga., June 29, 1886. A. H. VICKERY.

I used tobacco a great while, but have stopped it. A friend told me that you would send a smoker free to any one who would give up the use of tobacco. If you will send me one I will never use another speck; but if I do I will pay the full price of the smoker.  
 FRANK A. PADGETT.  
 Jacksonville, Ill. \_\_\_\_\_

HAS USED TOBACCO 55 YEARS, AND NOW QUIT.

I see much in GLEANINGS about your giving a smoker to those who quit the use of tobacco; but as I do not use nor ever have used it, I can not stop the use of it. But my grandfather, who began its use when four years old, and has kept it up for 55 years, has at last quit, and he is now fairly angry whenever he sees anybody using it. He said that I should ask you for a smoker; and if he ever uses the vile stuff again, and does not pay for it, I will.  
 A. H. ABEL.  
 Ironia, N. J. \_\_\_\_\_

I found a notice, stating that you would give a smoker to any one who had quit the use of tobacco. I think that I am entitled to the smoker, for I have been a habitual chewer and smoker. I used one pound of the best fine-cut in 15 days, and smoked about the same amount of smoking-tobacco, and occasionally a cigar. It has been some time since I quit; and if you see fit to send the smoker to my address, I agree to give you \$1.00 for it if I ever use tobacco again. I have 18 swarms of bees, and they are doing quite well, although it has been very dry here this summer. I am much interested in bee culture. I handle my bees without any protection whatever.  
 R. H. PEET.  
 Hebron, Pa. \_\_\_\_\_

My brother-in-law does not think you are reliable; and when I told him what was on the card I had just received, and asked for the promise in his own handwriting, as you asked for, he said something about like this: "He will never send it; you and he will keep writing to one another until you pay out more than it is worth. You are out 20 cents now, and I don't believe you can get him to send it, if I were to write the promise to him. I wouldn't fool about it any it any longer. I should like to have the smoker, and would consider it as a reward, but you'll never get it for me in that way" (this last rather positively). "If he sends it, though, I will stick to my promise. There has been a month's delay, and I believe I will buy one." And off he went about his work. Now, Mr. Root, I don't blame you for wanting things fixed exactly, "so there is no creeping-hole;" and if you are minded to publish this, and send him a smoker, you can do so.  
 Clear Creek, Ind. \_\_\_\_\_ A. H. TIERING, JR.

You say, if I quit on account of your offer, etc. I was persuaded through GLEANINGS to quit. I quit because it was right, and tobacco is injurious to my health, and not for money; but I was influenced by you to quit.  
 H. S. COLLINS.  
 Mayville, Mich. \_\_\_\_\_

A friend of mine quit the use of tobacco in order to get a smoker. He has not used it for 3 months, and says if he uses it he will pay you \$1.00 for the smoker, and I will give him the extra one I got of you if you will give me a new one.  
 A. L. LIGHT.  
 Grove Land, Ark. \_\_\_\_\_

I received the queen all right. I did not know there was any such promise required for the smoker; but I will promise to pay for it if father begins the use of tobacco again. I also indorse the promise.  
 C. M. KELLOGG.  
 Dallas, Wisconsin. \_\_\_\_\_

## KIND WORDS FROM OUR CUSTOMERS.

I received the A B C book all right, and like it. I don't see how you can sell such a book so cheap as you do.  
 H. S. PAYNE.  
 Richmond Corner, Me. \_\_\_\_\_

### THAT FOUNDATION.

The comb foundation was received all right. Thanks for prompt shipment. It is nice foundation. The cells are deep, and it is altogether good, better by far than that I used before (flat-bottom).  
 Carlstadt, N. J., Aug. 20, 1886. F. HOLTKE.  
 [See article on p. 728 in regard to flat-bottomed fdn.]

### A DOLLAR WELL INVESTED.

The A B C book I got of you is a handsome prize, and I think it is just "immense" pleasure to peruse its well-printed pages. One of my friends said that the dollar I paid for it was the best invested that he ever knew a dollar to be in printed matter.  
 A. H. ABEL.  
 Ironia, Morris Co., N. J., June 16, 1886.

### OUR WHEELBARROW FOR BEE-KEEPERS, AND WHAT A PRACTICAL BEE-KEEPER THINKS OF IT.

The wheelbarrow ordered from you on the 1st arrived on the 4th, and I must say that it is far ahead of any thing I have ever seen in the shape of a light wheelbarrow, even at a much higher price. It is both strong and light, and I should say durable, and just what a bee-keeper needs. I have thought for some time that I would have a light spring wheelbarrow made, but could not get one up for much less than \$10.00, while this one at \$4.50 entirely fills the bill. You are certainly to be commended for placing such a convenient article within such easy reach of bee-keepers and the public generally.  
 Wyoming, N. Y., Sept. 6, 1886. G. W. STANLEY.

[Many thanks, friend S. We feel assured that the bee-keeper's wheelbarrow will stand all you say.]

### HOW GLEANINGS PLEASES.

Inclosed find \$1.00 in payment of renewal of my subscription to your valuable and by me much-prized GLEANINGS for the ensuing year. It has been an ever-repeated pleasure to me, and I have profited greatly by its plain and comprehensive articles, and always waited for the arrival of each successive number with almost impatient interest to see what treat you would give us in the next, and it never failed to satisfy my expectations. It is really one of the pleasures and delicacies of bee-keeping, if I may so express myself, having so many different subjects on occurrences in life, and how to take and overcome them, as well as talks and suggestions regarding neighbors, household, and family, blended together in so pleasing a manner that I like it all the more. And now wishing GLEANINGS and its staff of editors and co-workers success in their noble work, I am your friend,  
 Newark, N. J. CHAS. H. THEBERATH.

[Many thanks for your very, very kind words, friend Theberath. It does us a "heap of good" to feel that our efforts are not only appreciated, but are bearing a little fruit for the Master.]



## OUR HOMES.

Have the gates of death been opened unto thee? or hast thou seen the doors of the shadow of death?—JOB 38: 17.

I PRESUME most of the friends have gone over the accounts of the events of the recent earthquake, and doubtless quite a few of the readers of GLEANINGS have had more or less personal experience of this event that has aroused the attention of every thinking man and woman of our land. Perhaps more than one earnest Christian has felt troubled, at times almost lost, in the effort of trying to comprehend why the loving heavenly Father should permit such disasters to occur; and I may as well confess to you frankly, dear readers, that I feel at the outset that it is a task far beyond my capacity or capabilities, to even attempt to handle the subject. May God in his infinite love and wisdom bless and direct my feeble words.

In considering the matter, and in reading it up that I might be able to talk to you in regard to it, I have felt my comparative insignificance as I perhaps never felt it before. A few days ago Huber and I were sitting hand in hand, watching the setting sun. He turned to me and asked in his childish way:

"Where does the sun go, papa?"

Now, do you wonder that I did not answer him immediately? I do not know but that he repeated his question two or three times before I felt able to give him any kind of a rational or consistent answer. Should I tell him the sun didn't go at all, but that the world on which we live turns around toward it? This would be the only really truthful answer, in one sense; but it was beyond his comprehension; and, furthermore, do we really *know* that the great sun is standing still? The intelligence of the world made a great stride when it decided that it is the earth that is constantly moving, and not the sun; but who shall say what the next great stride may unfold? The opportunity was an excellent one for teaching my boy, and I would by no means pass by such a query unanswered; but I felt as many a parent has felt before, that my answer must be suited to the capacity of my pupil.

Did it ever strike you, my friend, how many times Jesus, in teaching his disciples, told them kindly and lovingly that they were not yet able to understand the things of which he spoke? Toward his approaching death he tried to teach them self-sacrifice, and that it were better for them that he should die the death of a malefactor. They seemed, however, so utterly incapable of grasping the great thought of atonement, that he stopped or decided not to go any further just then. He says, "Ye can not bear them now," giving them to understand, evidently, that the time would come when they could not only hear but understand these great truths. How true it was in the case of Peter! Contrast the man as he was during his evangelistic work, with what he was before he denied his Master, when he so stoutly insisted, that, though all men should

turn away, he would not. Well, Huber will doubtless be able, some time, to be taught astronomy; but it would be folly to think of trying to explain much of it to him now. I spoke to him something like this: "My boy, the sun goes down behind the trees, clear out of sight; then in the morning this same old sun comes up back of the trees away over there. Don't you remember?"

"Oh! yes, papa; I know how it is now." And then he was full of childish prattle and other thiugs. By and by I can teach him more of the movements of God's great luminaries, but not now.

Is it not so, my friends, in regard to earthquakes? God is teaching us by great lessons, sometimes by terrible lessons, and oftentimes we come to the boundary of human capacity and intelligence. We not only can not understand, but, what is of much greater moment, we can not *bear* to be told the things he would tell us. We look aghast at the thought of sudden death; and even some who profess to put their whole trust in Him who has but to speak, and the winds and the waves obey him, stand terrified with trembling faith as they behold the apparent confusion of the elements. Does God really have any thing to do with earthquakes? Most surely he does. They are part of his plans from the beginning; and before we reject the teachings of his holy word, and rebel against the laws of the all-wise Creator, suppose we consider a little this matter of life and death—that is, so far as we are able to consider it.

In our opening text, God reproves the murmurings and complaints of Job and his friends. "Have the gates of death been opened unto thee? or hast thou seen the doors of the shadow of death?" It seems hard to see men, women, and children, perish by earthquakes, by storm, by cyclone, or by flood. We have become somewhat accustomed to the storm and to the flood, so that they do not strike us with the great horror that we feel when the solid earth under our feet seems to be solid earth no longer. I have been told, that it is impossible for human tongue to describe the awful sensations awakened when one realizes that the very earth itself is rolling and shaking beneath our feet. Once when seasick on board of a steamer, I so longed for the solid ground that I made up my mind that I would get off at the first opportunity, no matter where I was, nor what solid ground I found. With pallid cheeks, and tear-stains down my face, I pushed my way along the plank. One of the officers of the boat called after me, and told me that I was getting off at the wrong point. I told him I could not help it; I was going to get off, right or wrong.

"But," said he, "you can never get anywhere if you stop here. There are no railroads nor any thing else."

I told him in that case I should stay there always, and be happy; and when I felt stationary ground under my feet it seemed to me then that I could ask for nothing more, providing I could feel this solid ground always. Perhaps I can realize a little what it would be to find even this old earth an uncertain foothold; and may God help me to

sympathize with the brothers who have recently suffered. Death seems to us terrible in this shape, because it is comparatively new to us. We have been congratulating ourselves during all these years, that earthquakes did not visit our locality, or, at least, that the visitations are so far between, and so feeble when they do come, we might consider ourselves comparatively exempt. The events of the past few days teach us differently. Great forces are at work under our feet, that we dreamed not of, and our whole continent is liable at any moment, or at any hour, to be rolled and tumbled about like the waves of the sea. After the great Chicago fire, men talked of building houses that would withstand the devouring elements; but what architect or mechanic shall think of planning a building that will be secure against earthquakes? The idea is folly. The conviction forces itself upon us, that there is no place exempt from devastation and death and ruin. No place? Yes, thank God, there is a place of refuge. We are told in the Holy Scriptures, that, although heaven and earth should pass away, God's words shall not pass away. I do not mean, mind you, that the Christian shall be spared the pangs of death, or that he shall be passed by when the devouring elements come; but I do mean, that grace and strength will be given the one who puts his whole trust in God, so that he may bid defiance even to calamity and death. "My grace is sufficient for thee," is what the Holy Spirit told Paul when he besought God to take away the thorn in the flesh. But the thorn remained there still, and to the end of his life, to buffet him.

The question has sometimes been asked, why God should permit innocent, helpless women and children to thus suffer and die. My friend, the helpless and the innocent suffer and die by disease, and have suffered and died since time began. I presume the sufferings and death caused by an earthquake are not to be compared with the sufferings caused by disease. Disease is all round about us; we are familiar with it; and for some reason, perhaps not quite explained, most of us would prefer to die a slow and lingering death by disease, rather than a sudden death by accident; this feeling is perhaps largely caused by weakness—more largely by want of faith. It is true, that a faithful, trusting follower of the Savior is sustained by a Savior's love, and enabled to bear the pains and sufferings of disease; but is it not true, too, dear friends, that the faithful Christian has grace and fortitude given him to face death and torture unflinchingly, even though it comes by accident, or in the discharge of regular duties? I think he has, and yet I have asked myself the question over and over again, whether *my* faith in God's loving care is such that I should not get demoralized and frightened, and behave myself in a manner unworthy of a follower of the Lamb. May God help me to endure trial when the trial comes!

We are told by the papers that meetings were held in Charleston, and that groans and prayers were sent up to the Father, be-

seeding him to spare them from further shocks of the earthquakes. But still the shocks went on. Shall we not bear in mind that even the prayers of the Son of God for deliverance from the cup that stood before him were not granted? It is true, he ended with "Nevertheless, not my will, but thine, be done." But what mortal is there among us who could have the grace to say, when death faces him, "Thy will, not mine, be done"? And were these prayers that were offered up then in accordance with that spirit? When in sore trouble, or amid intense pain, it is human and natural to ask simply for deliverance—nothing more. My friend, did you ever think of it, that, when you ask God to deliver you from the pain and trials that fall to the lot of average mankind, you are asking to be an exception to the general rule of humanity? In that light, is it not a selfish one? Can you be a consistent follower of Christ, and ask that your path may be easy and smooth while your fellows are suffering all round about you? In our little home circle, the younger ones are prone to drift into selfish ways if they are not carefully taught and guarded. Sometimes Huber, in the exuberance of his spirits, sings out as soon as we get to the table, "Give me some strawberries. I want some strawberries. Mother! mother! give me some strawberries!" And this request is often made before any one at the table has been served at all. Sometimes I try to show him his selfishness by a reply something like this: "Why, my boy, do you want some strawberries when neither cousin Mabel nor any of the rest have had any at all?" Now, even though Huber can not understand the truths of astronomy very well, he can be taught the beauty of a self-sacrificing and Christian spirit; and he usually hangs his head with a look on his face that indicates that he feels ashamed. When pressed for an answer, he speaks up like a man, and says, "Wait on cousin Mabel first." Now, then, dear friends, are not our prayers for deliverance too apt to be like the request of the little one for strawberries? We want to be waited on first; we want the best of every thing ourselves when there is a choice of best.

One of the daily papers, a few days ago, was commenting on the different people who travel in our railway cars. The paper spoke of the fidgetty, nervous people who are unused to travel, and have to be making constant inquiries as to what to do and how to act. Then they contrasted them with the class who make a regular business of traveling—the commercial class, for instance. Well, they said this latter class would be off the train almost before it had stopped. If there were to be twenty minutes for dinner, they were first to the dining-table, and got the best places and secured the best viands before the former class had found out where the dining-room was. If tickets were to be secured for a sleeping-car, they secured all the best berths first, and left the others to do as they could. Now, I hope I am telling the exact truth when I say I don't want the best places when I travel. I hope I should feel ashamed of myself, even if I were smart



enough to succeed in getting the best of every thing, and the easiest places. I am sure I am, because in so saying I want to take my chance among the people. If somebody has got to take a poor place, let me be one of them. If I don't realize to the full extent what I am saying while I dictate these words, may God help me to come so near to him that I can say, "Give me not the best of every thing in life, but help me, and give me grace and strength to take some of the hardest places. If pain is the lot of humanity, help me, O Lord, to take my share of the pain and suffering; and when death shall come, whether it be by earthquake, by cyclone, by storm, or by flood, or by slow lingering sickness, help me, Lord Jesus, that through it all I may be able to say, 'Thy will, not mine, be done.' And if death should come with sudden horror, help me that I may be found ready to deport myself as becometh every follower of Him who died for us all."

I presume it is no doubt true, that only a few of us have any real comprehension of the amount of suffering poor humanity is sometimes called upon to bear.

As a general thing, no one thinks of murmuring against God when he dies in a natural way on a sick-bed; but, if I am correct, death by accident or great catastrophes, like earthquakes, floods, and tornadoes, does not compare in suffering with natural sickness. In speaking of some cases of intense suffering, please bear in mind that I do it solely that you may take a fair view of what doubtless lies before many of us. A Christian needs to be brave. He needs to be able to take pain and suffering in a manly, heroic way, and to take it, too, when none are near to look on and sympathize, if need be. Two cases have come to my knowledge, of such excruciating pain from prolonged suffering that the sufferers begged their friends to take their lives, to put an end to their misery. No doubt the poor sufferers had become so exhausted and worn out that they did not comprehend fully what they were saying, and perhaps delirium had something to do with it. It is true, I believe, that it is the lot of some to die comparatively without pain; but as we read that God sends the rain upon the just and upon the unjust, I believe it is also true that he sends terrible and agonizing pain upon the just and upon the unjust. I have not been able to learn that the most sincere and devoted Christian is, as a rule, spared from suffering, because of his devotion to the Savior. In fact, it has sometimes seemed otherwise, verifying the text, "Whom he loveth he chasteneth."

It was my privilege to be near a dear friend and relative a good deal of the time during her last sickness and death. For years before her death she had expressed herself as willing to go when God should call her. Her decline was slow and very painful. For some weeks before she died she would ask wearily what time it was, because the time passed so slowly. She longed for the night, and she longed for the morning; but amid it all, nothing seemed to give her so much comfort as to have somebody read to her from the Bible. I came in one

day to read to her, but found the family physician there. Like too many physicians, he was an ungodly man. He stood by the bedside, apparently in no hurry, laughing and joking; but when she asked me to read to her, and desired him to sit down a moment, he excused himself by saying he hadn't time. Now, although she was suffering at the time the most intense agony, she plead with him to listen to a few words from the Holy Scriptures. She did not *forget* her pain and suffering, but she *ignored* it as being of little consequence compared with the wish to do something for his soul's salvation. As the family physician, it was to be expected that *he* could do something to alleviate *her* intense suffering; but although he seemed to treat it as a light matter, she overlooked it all, and seemed only anxious that *he* should be healed. Now, God sustained her amid these sufferings, and helped her to bear them, but she felt the anguish none the less. She never complained nor murmured, although she was one of those organizations that feel pain most keenly. When she was so near her end that she was unable to speak to us, or even to give any sign, it was evident that the poor tortured body was suffering still; and when the last breath was drawn, and exhausted and worn-out nature refused to move any further, it was evident from the expression on her face that the last pang of death was the utmost agony. I knew her so well that I could tell by the movement of her face and mouth when she was suffering, and I think it quite probable (although some physicians may say she was not then conscious of pain) that the suffering of that last brief moment surpassed any thing she had ever known before. When it was over, a placid, peaceful expression settled over the features. She had fought the good fight through intense pain and suffering. She had finished the faith, like Paul of old, and the crown of righteousness was hers.

Now, my friends, far be it from me to frighten any one by the thought of death; on the contrary, I would bid you be brave, and strive to say with the Master, "Thy will, not mine, be done." We are human, and a kind heavenly Father will, without question, make due allowance for human weakness, even should we be tempted to feel, for the time being, that he has forsaken us. It will be no more than what the Master did. Whether it shall come by slow and torturing sickness, or by the swift elements over which we have no control, let us be ready to die as men, and as becometh Christian men and women.

The progress which science seems to be now making would indicate that we are, at least in a measure, at fault for the sufferings of sickness and disease. It may also be true that we are remotely responsible for floods and cyclones; but what scientist dare have the boldness to say that we are in any sense or measure responsible for the dire consequences of the earthquake? It is a matter that is in God's hands entirely. In that case, why should we worry or be afraid? The spirit that prompted the patriarch Job, when he said, "Though he slay me, yet will

I trust him," is what we need; and the chapter from which our opening text is taken will help us toward it. Some of us are naturally timid and cowardly. I have sometimes been afraid that I should fail miserably in living up to my own teachings were I suddenly called upon to pass through such a disaster as many of the friends and neighbors have been called upon to pass through in and around poor Charleston. In a recent number of the *Sunday-School Times* we find the following:

"It is recorded of John Bunyan, that, once when he was in prison, and uncertain whether he might not soon be condemned to die, the thought entered his mind: 'Suppose God should withdraw himself at the very last moment, fail to support me at the gallows, abandon me!' Then he says he resolved thus: 'If God do not come in, I will leap off the ladder even blindfold into eternity, sink or swim, come heaven, come hell! For it is my duty to stand to his word whether he ever looks upon me or saves me at the last, or not!'"

One is almost inclined to smile at the above; and yet, my friends, does it not embody a wonderful truth? God has placed us here in this world, and paid us a great compliment in making us free—free to step toward heaven or to step down to ruin. Now, shall we not use this freedom to be bold and brave for the right, no matter what the consequences are? We are not responsible for earthquakes; but we are responsible for our behavior when God sees fit in his infinite love and mercy to call us to face death and the great unknown beyond.

In conclusion, how much does it matter whether we die now or die ten years later? I once visited a sick man, near to his death, with my old pastor, whom I have before mentioned. The man had (since his sickness) made some profession of religion, although his whole life had been very intemperate and bad. The minister asked him if he would like to have us pray for him. "Yes," he said, "and please pray that I may get well." Now, then, suppose we had so prayed, and that he had recovered, what would he probably have done with ten years more of life? Why, from the talk I had with him, and from what I knew of the man, I felt sure it would have been ten years more of drinking and wickedness; at least, I am safe in saying that the ten years would have been of no sort of benefit to him or to anybody else. In such cases what are a few years of life worth, or what does it amount to?

In a recent Sunday-school lesson we find the text, "If ye abide in me, and my words abide in you, ye shall ask what ye will, and it shall be done unto you." No doubt a great deal of discussion has arisen in regard to this verse. May be I am not equal to the task of handling it; but, dear friends and fellow-Christians, I feel sure of this, at least: That those who are abiding in Christ will never be found begging simply for an easy life, or one of freedom from pain. I do not mean to say that it is wrong to pray that your life may be spared, or that God may ease the pains that rack your body; but is not such a prayer better when put something like this? "Help me, O Lord, to better understand the laws of health and

the laws of life, that I may be able to see wherein I have transgressed these laws, that I be thus afflicted. And if my labors in thy vineyards have heretofore been pleasing in thy sight, and if it is consistent with thy holy will that my life should be spared, I pray thee to help me to arise from this bed of suffering. Nevertheless, not my will, but thine, be done." When we ask God for any of these things, we ought to be in such an attitude of heart that we can say, "Thine be the praise and the glory for ever. Amen." If we are abiding in Christ, our prayers are not likely to be selfish or inconsistent; and if they are in the spirit of Christ, God will surely answer.

While speaking of this subject of dreading death, and longing for longer life, permit me to refer to an incident I may have mentioned before. I wish to speak of it because it contrasts so powerfully with what the life of a Christian should be: During a steamboat accident on the Ohio River, great numbers of people were thrown into the water, and many were drowned. Bystanders on the shore gave what aid they could; still many lives were lost in spite of them. Well, during this scene of excitement big strong men were seen to hurl or strike weak women to get them off the planks whereon they had a promise of being rescued, in order that they might save their own lives. Of course, it would not have been safe for those men to land where the people could get hold of them. They accordingly made for the opposite shore, and escaped on planks and ran off into the woods. I can readily imagine that they were intemperate men—gamblers, possibly, maybe highway robbers by profession. They did not propose to die, even though a few helpless women *did* have to be murdered in order to save *their* miserable lives. Contrast such a spirit with that of the self-sacrificing spirit of a Christian. And beware, my friend, that nothing in your life or actions should ever come, even remotely, near to such a spirit. Our lives belong to God. They are his to give and his to take away.

I must not omit mentioning a feature connected with these losses of property and life that seems to have something encouraging in it. At the time of the great Chicago fire, almost everybody was astonished to see the alacrity with people north, south, east, and west, rushed forward to aid the sufferers. Chicago had but to make her wants known, and food and clothing, as well as money, poured in from all sides, until that great city of destitute ones was obliged to say, "It is enough." And this one thing, I am sure, did more to bring about friendly feelings and friendly relations among the people of the different cities of the different States than almost any other thing that could have happened. So far as I have learned, the same thing will be found true for the sufferers at Charleston. Already the mayors of the different cities, and the officers of the government, who have it in their power to send relief, are doing all that rapid communication and quick transit can do. Who knows but that this event may do more toward restoring and establishing on a perma-



nent basis friendly relations between the North and the South than any thing else that has happened for many a long day? In the language of our text, the gates of death have not been opened unto us, neither have we seen the doors of the shadow of death. We know but little of the machinery that governs the universe in this life, and we know even less of the great unknown eternity beyond it. But we *do* know that a kind loving Father in heaven looks down upon us, and that in his own good time his kingdom shall come, and his will be done on earth as it is done in heaven. May he give us grace to say, under all circumstances and conditions, "Blessed be his holy name."

## GLEANINGS IN BEE CULTURE.

*Published Semi-Monthly.*

A. I. ROOT,  
EDITOR AND PUBLISHER.  
MEDINA, O.

TERMS: \$1.00 PER YEAR, POSTPAID.

For Clubbing Rates, See First Page of Reading Matter.

MEDINA, SEPT. 15, 1886.

Where wast thou when I laid the foundation of the earth?—  
Job 38:4.

DISCOUNT ON ORDERS RECEIVED THIS FALL FOR  
GOODS TO BE USED NEXT SEASON.

We will, during the month of October, allow a discount of 10 per cent on goods ordered now, strictly for next season's use; that is, we allow the above discount for goods ordered now that you will not need to use before next spring. This will include Simplicity hives, sections, frames, honey-extractors, etc.; but it does *not* include chaff hives, glass and tin receptacles for honey, and, with some exceptions, tools and machinery. We make the above discount that we may have something to do during the dull fall months, and to allow you something for furnishing the money now, instead of six months hence.

### OUR CARP-POND.

WELL, after all this long time I am glad to be able to say that we have young carp in our pond, so plentiful they look like swarms of bees. They are now from half an inch to an inch in length. I do not know why we have not been able to see the little "people" before, unless it was on account of musk-rats and mud-turtles. Ernest killed the turtles with his gun, and one of our boys whom we call Fred happened to be expert with steel traps. I offered him 25 cts. for all the musk-rats he would catch. It turned out bad for the musk-rats, but it came pretty near filling Fred's pockets with silver quarters.

### TERRY'S SYSTEM OF POTATO CULTURE.

We are just now rejoicing over great large fine potatoes, and almost no small ones in a hill. They are the result of the teachings of the Potato Book. If you should plant a dozen stalks of corn in a hill,

you would get a great quantity of nubbins and no corn. Well, my friend, if you put a great many potato-eyes in a hill you usually succeed in getting a large lot of "small potatoes;" whereas by Terry's system you have one large stalk and no more; at the proper distance, another large stalk, and so on, and the result is as you might expect—large fine potatoes, and probably more bushels to the acre than you could possibly get in the old-fashioned way.

### OUR NEW BUILDING.

It is now roofed and inclosed. The engine is in place, set on a bed of masonry that seems as if it might stand the shock of an earthquake—that is, if any thing could withstand such a catastrophe. The shafting and pulleys are ready for their places, and every thing about the whole establishment is to be the best of its kind that the present age affords. Special machinery, built expressly for the different processes of bee-hive making, the results of the experience of many busy years in the work, are to take the place of our old machines wherever they can be bettered. The combined area of the floor room in all the three buildings now measures nearly a whole acre. Counting the barn, toolhouses, and warehouses, it would make fully an acre and a quarter of covered floor room for our hands to work on during stormy weather.

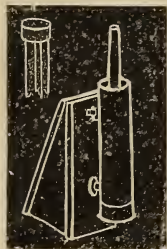
### MORE SWARMING OUT.

It did not happen in December this time, but it happened to be exactly Sept. 1. It was not the queen-clerk this time, and Ernest had nothing to do with it. It was our daughter Maud. The last we saw of her she was going northward, and by and by we heard of her over in Canada. You know, I have always had a warm place in my heart for the Canadians, and now I don't mind telling you why. When Maud started on her trip, one of our Canadian boys, John T. Calvert, whom you have heard me mention, went with her, I suppose for safe keeping. Years ago, when cares pressed, I prayed, as I had often prayed before, for efficient helpers; and by one of these wonderful providences a Christian boy away off in Canada was praying too, for a place to work where he need not hear God's holy name taken in vain day by day. Through GLEANINGS he heard of us and our work, and John has proved himself a blessing indeed in more ways than one. If he is a fair sample of Queen Victoria's subjects, we can in real truth say from our heart, "God save the queen." Ernest and John have been away together at school. When my health threatened to give way, Ernest took hold of GLEANINGS, and John rolled up his sleeves and took one of the next most important positions in our establishment—in fact, the position which for several years I had feared none but myself could ever fill—the position of directing the purchases. John has filled the position for the greater part of the present year in such a way that I begin to have more faith, perhaps, in the younger ones in general; more faith in Queen Victoria's subjects, and, I trust, more faith in God. May he grant that this union between one of the subjects of the stars and stripes and one of Queen Victoria's domain may be typical of the friendly relations that seem fast growing up between the two nations. Now, then, Bro. Jones of the C. B. J., we extend again to you the right hand of brotherhood, and feel that we have an additional reason to claim relationship.

## OUR OWN APIARY.

WEBSTER'S FUMIGATOR, OR SMOKING BEES WITHOUT SMOKE.

THE above fumigator has arrived, and has been tried in "Our Own Apiary." It has the appearance of any ordinary smoker. The barrel, however, is made of zinc, I suppose, to resist the action of the chemical agent used, and is so fastened to the bellows that it can be quickly removed at pleasure. To facilitate handling, the barrel is also fastened a little to one side. In order that you may more clearly understand, I submit a diagram of the Webster fumigator.



At the lower end, you observe, is a cap. The same detached is shown at the upper left-hand corner. To the rim of the cap are soldered four wires, hooked at their ends. In these wires is secured a sponge. This sponge is moistened with 50 or 60 drops of the agent, and on being slipped into the barrel of the fumigator the apiarist is ready for work. Accompanying each

WEBSTER'S FUMIGATOR, smoker is a bottle of the agent, which, I should say, ought to last a season.

WILL THE WEBSTER FUMIGATOR WORK AS SATISFACTORILY AS THE ORDINARY SMOKER?

After having prepared the fumigator as given in the directions, I first tried it on myself, inhaling as much of the odor as I could. Did I experience any disagreeable effects? Not at all, nor was it even unpleasant to me. "Well," said I to the apiarist, "that wouldn't drive even a fly, let alone vicious bees." We selected a cross colony, opened it, and gave them a few whiffs. Yes, it *did* drive them down some, but not like smoke. We then tried the fumigator upon gentle Italians. The effect was the same as before. For vicious bees, the directions say, "Add four or five drops of ammonia to the sponge." On the following day I added the ammonia as directed, and the results were much more satisfactory, and I then opened and examined with it 50 or 60 colonies very successfully. Once or twice, from force of habit, I found my hand jerking back involuntarily when my hand came in contact with the barrel of the fumigator, that member not clearly recognizing the difference between a hot smoker and a cold fumigator. No, it does not have to be handled like hot cakes. It can be picked up without fear of being burned; there is no danger of its setting anything on fire by contact or sparks; neither does it go out. It is always ready, and requires neither matches nor a dusty litter. I have briefly summed its good features, now let us consider its bad points: The fumigator drives bees to some little extent, and many of the operations connected with bees are assisted by it; but for real conquering and quickness of effect, smoke is far superior. Why? Because smoke is much more severe, and one good puff from the Clark, to my notion, is equal to half a dozen whiffs from the fumigator. The odor from the latter is not pungent enough, even with the ammonia, and I did not succeed in making it conquer vicious bees. I recollect in opening one hive of hybrids I had to lay aside my fumigator and bring to bear the smoker. I need hardly say that two or three puffs of the latter

made the little rascals succumb. Again, the agent used in the fumigator is a liquid of the consistency of thin syrup, and is very "sticky stuff." Of course, I got my fingers all daubed, and to get it off seemed to baffle even soap and water. Now, I have found from my observation that *not* all men are neat; and if my memory serves me rightly, Mrs. Root, in my hearing, has expressed a similar opinion. I conclude, therefore, in the light of this fact, that *we* must have nothing sticky about a smoker.

THE ODOR FROM THE FUMIGATOR.

There is a very strong odor about the agent used in the fumigator (not pungent, mind you), and the scent has a way of clinging to the clothing, like tobacco from a smoking-car. During one forenoon that I used the fumigator, my clothing had acquired this scent, which smells, as nearly as I can describe, like carbolic acid and tar, of which, indeed, I believe it is made. Yes, my clothing, hives, and, I was about to say, that portion of the apiary where I worked, smelled of that stuff. It so thoroughly destroyed my sense of smell for foul brood, that, in the afternoon, I used the Clark. When I arrived home that noon, Mrs. Root exclaimed, "Why, where have you been? you smell of creosote." Yes, it is true, my clothing did carry the odor of tar and carbolic acid, though I would say that was not at all offensive.

Now, I have endeavored to state candidly the good and bad points with the fumigator invented and sold by W. B. Webster, of Workingham, Eng. I can not say that I think it will take the place of smoke as yet, but I think our English friend has taken a stride in the right direction.

FUEL FOR THE CLARK SMOKER.

In another column our friend J. A. Green tells what and how he prepares fuel for smokers. I see he uses successfully planer shavings in the Clark smoker. Our experience has been much more favorable so far with the basswood sawdust, mentioned on page 551. With the latter it is a common thing for us to make the smoker last for half a day without refilling. To do this we prepare the fuel as follows, for since our last report we have learned some new kinks in filling: Invert the smoker (if you are using a Clark) and drop upon the grate some light rotten elm; next drop a lighted match upon this wood;\* work the bellows until the rotten wood is all ablaze, and then drop over this a thin layer of finely broken rotten wood. Work the bellows meantime, and fill with basswood sawdust mixed with a few pieces of rotten wood. There, now, just see what a volume of blue smoke you have! When not in use during the half-day or so, the Clark as thus prepared will die down, but not go out; for you know sawdust will smoulder for a great length of time. A few vigorous puffs will quickly develop a large quantity of smoke. With this sawdust smoke I think I should not be afraid to "tackle" the most vicious Eastern bees, without veil or other protection. In fact, neither has the apiarist nor myself when at work in the apiary had occasion, with one or two exceptions this summer, to resort to the veil; but we have smoke, mind you — enough to make you cry.

BEES ROARING ON RED CLOVER.

While working among the bees the other day, I saw that they were bringing in a large quantity of light-colored honey. Tasting it I detected the un-

\*I think that I should prefer to light the smoker as recommended by J. A. Green: see page 723.



mistakable bumble-bee-honey flavor, for which we boys used to pay so dearly. So much of this red-clover honey has come in of late that we shall not be obliged to feed nearly the quantity of sugar syrup we had anticipated. Neighbor Chase, who furnishes us such nice comb honey, says that his 50 colonies have gathered 2000 lbs. of this same red-clover honey within the last few days. Our bees have all been roaring, and as hard at work, apparently, as if on white clover. I have marked two of the colonies whose bees have especially distinguished themselves. One was an imported, and the other a daughter of an imported. We propose to breed from these next season, if all goes well.

#### WINTERING, AND HOW WE PROPOSE PUTTING THE BEES UP FOR THIS WINTER.

I will say at the outset, that our colonies will be put into winter quarters, essentially the same as last year; that is, in chaff hives on their summer stands. As red-clover honey has been coming in very freely of late, some colonies will be given natural stores; but a large number will have to be fed granulated-sugar syrup. Having met with good success in outdoor wintering for the past few years, doubtless many of the A B C scholars would be pleased to know that we are still using the plan recommended in the A B C of Bee Culture. In order that I may give more definite information as to some of the minutiae, I insert below the following letter, which will doubtless cover many of the queries in the minds of the A B C scholars:

GLEANINGS of Sept. 1st came to hand in due time, and I was in hopes I should see something from you or Ernest, under the head of "Our Own Apiary," as to how you intend to prepare your bees for wintering.

1. Have you changed any from the rules you gave in the A B C book of two years ago?

2. How much opening do you leave at the entrance?

3. Do you use the Hill device now?

4. When the hive is full of stores and bees, very heavy, do you remove any of the frames and put in chaff division-boards?

5. When a hive is rather short of stores, when and how do you feed, and how fast?

When you introduce a queen by hanging the cage with queen and escorts between the combs, do you spread the combs so the bees can pass between the cage and the opposite comb, or do you put the combs tight up to the cage on both sides? Some advise never to use a queen with her own workers or escorts.

If you will give this information I think you will oblige many, as rules coming from the "Boss" of the "Home of the Honey-Bees." J. H. SMITH.  
Stowe, Vermont, Sept. 6, 1886.

Your first question I have already answered.

2. With chaff hives we always leave a full-width entrance.

3. We have used, and still purpose to use, the Hill device. We place it over the center of the brood-nest, with the backbone parallel to the frames.

4. I think not, if I understand the condition of the colony you have in mind. We have sometimes had colonies so strong and well supplied with stores that we have given them the full capacity of the brood-chamber. They were placed on eight frames, spaced out so as to fill the lower story. During winter, combs need to be spread a little further apart than at other times. Whether the colony be strong or weak, it should be crowded on as few frames as possible. When the cold weather comes, their contracted apartment, if sufficient stores are provided, will be none too small for them. I would say, that most of our colonies are put on from five to six frames, with a division-board on each side.

5. When short of stores we feed sugar, as recommended in the A B C of Bee Culture; namely, 25 lbs. of sugar to a gallon of water. Perhaps the easiest way, when steam is not to be had, is to pour the water at a boiling temperature upon the sugar; then stir vigorously for a short time. Of all the feeders ever invented, we use and prefer the bread-pan feeder, holding about a pint of syrup. To prevent the bees from drowning, the ordinary cheese-cloth is spread over the pan of syrup. This pan is placed directly over the cluster, the enameled cloth or covering being rolled back. At this time of the year we raise the cover and pour in about a pint every evening. If late in the fall, and the colony is short of stores, we use a milk-pan, prepared as above, filled with syrup. We can thus feed from ten to fifteen pounds in an evening.

In regard to introducing a queen, her escorts will, as a rule, occasion no trouble. I think, however, with a valuable queen I would remove the attendant bees before caging her majesty. We space the two combs, between which the queen is caged, a little further apart, so as to permit the bees of the hive to become "acquainted" with her.

ERNEST.

## HOW TO WINTER BEES.

Essays by James Heddon, Prof. Cook, G. M. Doolittle, A. E. Manum, G. W. Demaree, J. E. Pond, Jr., J. H. Martin, C. W. Dayton, and P. R. Russell, all will appear in the October number of the American Apiculturist. Send 10c in stamps for copy.

Address AMERICAN APICULTURIST,  
18tf Wenham, Mass.

DADANT'S FOUNDATION FACTORY, WHOLESALE AND RETAIL. See advertisement in another column.

## A BARGAIN IN HONEY-TUMBLERS.

Among the many cheap packages for retailing extracted honey, the ½-lb. and 1-lb. tin-top glass honey-tumblers hold a prominent place. Though not quite as handy to carry as the glass honey-pails, they are much cheaper, and will be preferred by some. We have at last succeeded in obtaining these direct from the manufacturers, and get jobbers' prices instead of buying them from jobbers, as we have had to do in the past. We can thus offer them to you at the following reduced prices:

½-lb., 3c each; 25c for 10; \$2.40 per box of 100; \$5.25 per bbl. of 250, or \$21.00 per 1000.

1-lb., 3c each; 28c per 10; \$2.75 per box of 100; \$5.20 per bbl. of 200, or \$24.00 per 1000.

Orders for 1000 will be filled direct from the factory in Pittsburgh. You will notice that the tumblers are much cheaper in barrels, as a barrel costs us 35c, and a box of half its size costs 50c.

A. I. ROOT, Medina, Ohio.

## Black and Hybrid Queens For Sale.

For the benefit of friends who have black or hybrid queens which they want to dispose of, we will insert notices free of charge, as below. We do this because there is hardly value enough to these queens to pay for buying them up and keeping them in stock; and yet it is oftentimes quite an accommodation to those who can not afford higher-priced ones.

My queens are all gone. I have been overrun with orders for black and hybrid queens.  
16-17-18 J. A. BUCKLEW, Clarks, Coshocton Co., O.

Good hybrid queens, 25 cts. each. Some 1 year old, some a month or two old.

J. H. JOHNSON, Middaghs, Northamp. Co., Pa.

For sale, 10 hybrid queens, prolific, the bees being about one-eighth dark, or gray, from them; excellent honey-gatherers, easy to handle. Price, one, 40 cents; two or more, 30 cts. apiece.

CHAS. L. HILL, Dennison, Ohio.

## SELLING HONEY TOO LOW.

MRS. CHADDOCK'S VIEWS.

**M**R. HEDDON says, page 694, "I am sorry to read the low prices Mrs. C. tells us she is selling honey for. I think such low prices for comb honey are entirely unnecessary, and would, if long continued, drive us all out of the business. She is selling at a price below the cost of production, according to Mr. Doolittle, and I think his figures are about right." Well, Mrs. Chaddock feels sorry too; she has several dollars' worth of sorrow on hand. I always feel a sort of frustration when the time comes to begin selling honey. I love the almighty dollar, and I want all of them that I can get; and at the same time I have a conscience that is always pricking and prodding me, and telling me that I am trying to sell things for more than they are worth; and the only way that I know of to do is to strike a kind of general average between my conscience and my desires, and then go ahead. He says such low prices are unnecessary. Well, that is so for this year; but it is not so every year. If there is a big honey-yield, and half the farmers have a little honey to sell, then low prices are a necessity to me. I am not going to ship a pound of honey if I can help it. I do not want the bother of it, nor the loss; and if I can, by any thing short of a miracle, tell what honey ought to sell for here, I intend to sell for that.

Last spring opened up with a grand flourish. Everybody's bees wintered well, and there was honey in the willows and maples, the apple-blossoms, plant lice, and raspberries. The bees bred right up to the white-clover harvest, and were the strongest that I ever saw them so early. The white-clover yield was a princely one, and, right in the middle of it, I began selling honey. In riding about the country I took pains to inquire about other people's bees, and they were all in good condition. Then I read the honey markets as given in the *American Bee Journal* and *GLEANINGS*. Chicago market, for June 9th and 16th, was 14 to 15 cts., and selling slowly. St. Louis market for the same dates read, "Choice comb, 10 to 12 cents; extra fancy, of bright color, and in No. 1 packages,  $\frac{1}{2}$  advance on above prices." I looked at the matter from all directions. I knew that sugar was selling at five cents, and butter at six; eggs at seven, and strawberries that I used always to sell at 40 and 50 cts. were selling at 20 cts. right along; and I could buy just as good lawn for 7 cts. as we paid 12 $\frac{1}{2}$  for ten years ago; and taking all things together with the big honey-yield that we were going to have, I set the price at 10 and 12 $\frac{1}{2}$ . The cost of producing a commodity does not fix the price at which it must sell. A great plenty of any thing brings down the price. But the great plenty did not come. The white clover yielded splendidly; but when it was gone, every thing stopped short. Then I stopped selling at 10 cts., and I now sell only at retail. I am going to let the farmers supply the town markets with their five-cent comb honey for awhile. I'm awfully scared, I tell you. May be I've injured the honey-business all over the United States and Europe. I promise Mr. Heddon never to do the like again unless I do not know any better.

Vermont, Ill. MAHALA R. CHADDOCK.

You are touching quite an important matter, my good friend. Few things require more wisdom in business than in deciding

just when to drop prices. The merchant who purchases goods that are not perishable has no trouble at all in deciding that, if he buys an article for 8 or 9 cts., and sells it for 10, he is all right; but the bee-keeper or the farmer who produces his goods by tilling the soil rarely knows exactly what they cost, and it would not matter much if he did. Every thing is so uncertain in his business that it is his duty to find the best market he can. If he can get more money for his produce by going to a large city—that is, after all expenses are paid—by all means let him do so; or if he can get more money by putting up his crop in small neat packages, and taking it fresh to people's homes, by all means do that way; but when he is satisfied people won't pay what he thinks he ought to have for his product, then he must either improve the appearance and style of his packages, or drop the price. I would not drop the price until it seemed to be the last resort. Raise the quality if possible, so as to keep the price uniform. Where the prices have been established, and the goods are going off freely, I would prefer to buy out some small producer rather than let him injure the market; and sometimes it pays better to buy out such producer, even if you can't sell the stuff for what you paid for it. But this would refer to small lots, of course. If the farmers round you have small lots of honey that they seem disposed to run off at 5 cts. because they don't care to bother with it, I would try to find out about it beforehand, and take it off from their hands. Perhaps you may be obliged to sell it for 5 cts. per lb. yourself; but it will hurt your trade very much less in that way, because you can explain to your customers the difference in quality, style of package, etc.

## CHEAPEST OFFER EVER MADE.

In order to introduce my stock more extensively I will sell pedigreed Poland-China pigs, from prize-winning stock, at only 6 cts. per pound, spring pigs. Small pigs, not akin, \$5.00 per pair. Sent at reduced rates by American Express. Safe arrival and entire satisfaction in every case guaranteed. Full colonies of Italian bees in A. I. Root's Simplicity hive, \$4.50. Address **N. A. KNAPP,** 18d Rochester, Lorain Co., Ohio.

## LARGEST BEE-HIVE AND SECTION FACTORY IN THE WORLD.

## GREAT REDUCTION!

Until January 1st, we will sell at a discount. Write for reduced prices.

**G. B. LEWIS & CO.,**  
Watertown, Wisconsin.

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**Wanted.** A partner to take a half-interest in a nice little apiary, and help me introduce one of the best bee-hives ever invented. Must be honest, industrious, and a good mechanic, or a good apiarist. **M. J. HARRIS,** 18d Clay City, Clay Co., Illinois.

## QUEENS ITALIAN QUEENS

Of the best strains, warranted purely mated, \$1.00 each; 6, \$5.00. Satisfaction guaranteed. Circular and price list free.

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## GLEANINGS IN BEE CULTURE.

### Books for Bee-Keepers and Others.

Any of these books on which postage is not given will be forwarded by mail, *postpaid*, on receipt of price.

In buying books, as every thing else, we are liable to disappointment, if we make a purchase without seeing the article. Admitting that the bookseller could read all the books he offers, as he has them *for sale*, it were hardly to be expected he would be the one to mention all the faults, as well as good things about a book. I very much desire that those who favor me with their patronage shall not be disappointed, and therefore I am going to try to prevent it by mentioning all the faults so far as I can, that the purchaser may know what he is getting. In the following list, books that I approve I have marked with a \*; those I *especially* approve, \*\*; those that are not up to times, †; books that contain but little matter for the price, large type, and much space between the lines, ‡; foreign, §.

#### BOOKS ESPECIALLY FOR BEE-KEEPERS.

As many of the bee-books are sent with other goods by freight or express, incurring no postage, we give prices separately. You will notice, that you can judge of the size of the books very well, by the amount required for postage on each.

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6 | First Steps for Little Feet. By the author of the Story of the Bible. A better book for young children can not be found in the whole round of literature, and at the same time there can hardly be found a more attractive book. Beautifully bound, and fully illustrated. Price 50c. Two copies will be sold for 75 cents. Postage six cents.

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The Weekly

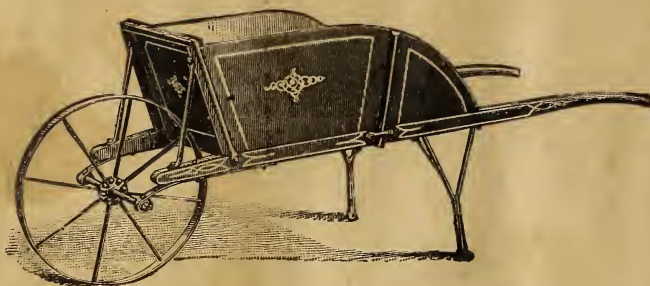
## British Bee Journal.

The British Bee Journal is now mailed to our address in packages, weekly. In order to dispose of them, we offer them at present at \$2.62 per year, postage paid, beginning January, 1886. Will guarantee safe arrival of every number.

A. J. ROOT, Medina, Ohio.

## ❧ A WHEELBARROW ❧ FOR ❧ BEE - KEEPERS. ❧

ALSO A WHEELBARROW FOR WOMEN, CHILDREN, AND  
PEOPLE WHO ARE NOT VERY STOUT.



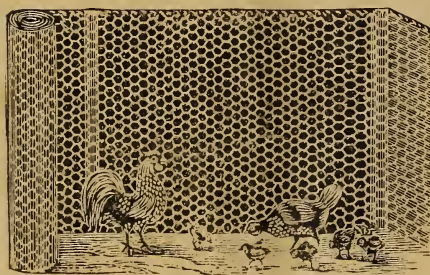
OUR 35-POUND WHEELBARROW, CAPABLE OF CARRYING 500 POUNDS.

them at their convenience, when times were dull. Well, friends, the wheelbarrows are here, and they are a surprise to everybody. We show you a picture above. We have two sizes—the smaller one weighing only 35 lbs., and yet it will carry 500 lbs. safely, and it can be packed so closely together for shipment that you can take the whole thing under your arm and walk off easily. The wheel has flat spokes instead of round. The different pieces are all cut and forged by means of dies. The legs are steel, so they will neither break nor bend, even if you bump them on the sidewalk. The springs are oil-tempered, with adjustable bearings, so you can tighten them up for wear. More than all, the wheelbarrows are the nicest job of painting and varnishing, I believe, I ever saw, for a farm implement. They are handsome enough to go around town with, and strong enough to do heavy work; and yet the price of the small size is only \$4.00, the same as our iron wheelbarrow. The larger size is \$4.50. The only discount that can be made is 5 per cent off for two; 10 per cent off for five, or 15 per cent off for ten or more. They can be sent either by freight or express. It is only five minutes' work to put one together.

I have several times felt as if I should like to try my hand at making a wheelbarrow of our strongest wood and our best steel, properly braced and arranged so as to give strength, and yet not weigh one ounce more than is absolutely necessary. At the Ohio State Fair last year I found a wheelbarrow that came so near filling the bill that I asked the manufacturers how cheaply they could make 100. The wheelbarrow was all I could desire; but the price, I thought then, was more than we could stand. During the winter, however, they made a proposition which I considered very reasonable, providing they could make

**A. I. ROOT, Medina, Ohio.**

## GALVANIZED WIRE NETTING, FOR FOULTRY INCLOSURES, ETC.



This wire netting comes in rolls 150 feet in length and 4 feet in width. This would give 600 sq. ft. of surface, and we are enabled to furnish it at the low price of one cent per sq. foot, or \$6.00 for a roll. Staples for fastening to the posts are 20 cts. per lb., and 1 lb. contains about 400 staples. About 1 lb. of these is needed for a roll of netting. The posts to hold it should be not more than 10 ft. apart, and it should be set in the ground at least 2 ft. You can put on a top rail, if you choose, but the selvage edge of the netting makes a pretty strong fence; and as the fowls can not see it they can not tell how high to fly; and after being bumped down several times they usually give it up. In putting it on the posts, draw the top of the selvage tight, and afterward draw the bottom down and fasten that. You can put a board a foot wide along the bottom, if you choose. This will prevent small chickens from getting through, and makes the fence one foot higher.

One advantage this netting has over wooden pickets is, that it does not catch the wind as they do, and therefore the posts are not so liable to be tipped over; besides it presents a very much more

ornamental appearance, as you will see by the cut. The meshes are two inches across; and where the wire crosses it is securely soldered together, for the whole fabric is immersed in melted zinc after the whole is woven together. The size of wire used is No. 19. This galvanized wire never rusts, so it will last a lifetime, unless it is damaged by careless running into it. If you want to make division fences, so as to keep different breeds from the same yard, it is better to have a board at the bottom at least one foot wide, so the fowls can not be gossiping through the wire, and pecking at one another. You will notice that one roll makes a yard nearly 40 feet square, and this is plenty large enough for 20 or 30 fowls.

Another advantage this netting has over wooden pickets is, that you can see what is going on inside so readily. The wind, also, has free access, which is quite an item during sultry weather. It should be shipped by freight. The weight of a single bale is about 50 lbs. It may be shipped from here or from New York or Chicago, as may be convenient.

If you want us to cut rolls, the price will be  $\frac{1}{2}$  c. a foot extra. On two or more rolls, we can give 5 per cent discount; on ten or more rolls, a discount of 10 per cent. As the above prices are very close indeed, they can be given only when cash comes with order. This wire netting can be used in a hundred different ways for protecting any thing. It makes very pretty and efficient trellises for running vines. As it is galvanized wire, the weather has no effect on it whatever.

P. S.—We keep in stock only the one width mentioned above; viz., 4 feet high, although you can have it made to order from 2 to 6 feet. The 2-foot width is just right for ducks, rabbits, etc. The price will be the same; viz., one cent per square foot. All other widths come in bales 150 feet in length. Where less than a whole bale is sold, the price will be  $1\frac{1}{2}$  cents per square foot. If wanted by mail, add 2 cts. per ft.; or 15 cts. postage for 10 ft. Prices for smaller mesh, or mesh made of heavier iron, on application.

**A. I. ROOT, Medina, Ohio.**